



# OPERA WP1 Track: Analytics Data & Systems

# Program for OPERA WP1 Track: Analytics Data & Systems



**Mogens Sandfær and Christina Steensboe, DTU**  
OPERA WP1 Current Progress and Plans

**Ludo Waltman, CWTS Leiden**  
Analytics Data – New Options, Quality and Coverage

**Christian Hauschke, German National Library of Science and Technology (TIB)**  
ROSI – Reference Implementation for Open Scientometric Indicators

**Muhammad Javed, Mastercard**  
Mission Statement and Re(use) of Scholars@Cornell VIVO Developments



# OPERA WP1

## Current Progress and Plans

Mogens Sandfær, Head of Research Analytics, DTU

Christina Steensboe, Senior Executive Officer, Research Analytics, DTU

# OPERA Systems Overview – Key Tools

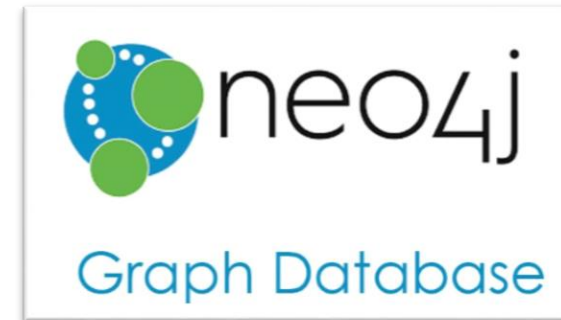


connect  
share  
discover

Open Source

Open Community

Open Data



# OPERA Systems Overview – 2 VIVO



Up & Running

**1**



A single university (in casu DTU)  
 Research Analytics Platform – RAP  
 For in-depth (internal) analyses

**2**



A test platform for several universities  
 (in casu from Denmark) – For inter-  
 university analytics and visualisations



# OPERA Data Overview



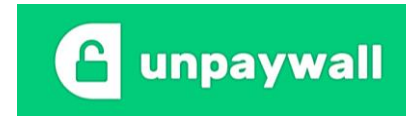
## Basic data sources One per VIVO



WEB OF SCIENCE™  
InCites



## Supplementary data sources Options for both VIVO



# OPERA Systems Overview – 2 VIVOs



Up & Running

1



A single university (in casu  
Research Analytics Platform  
For in-depth (internal) ana



2



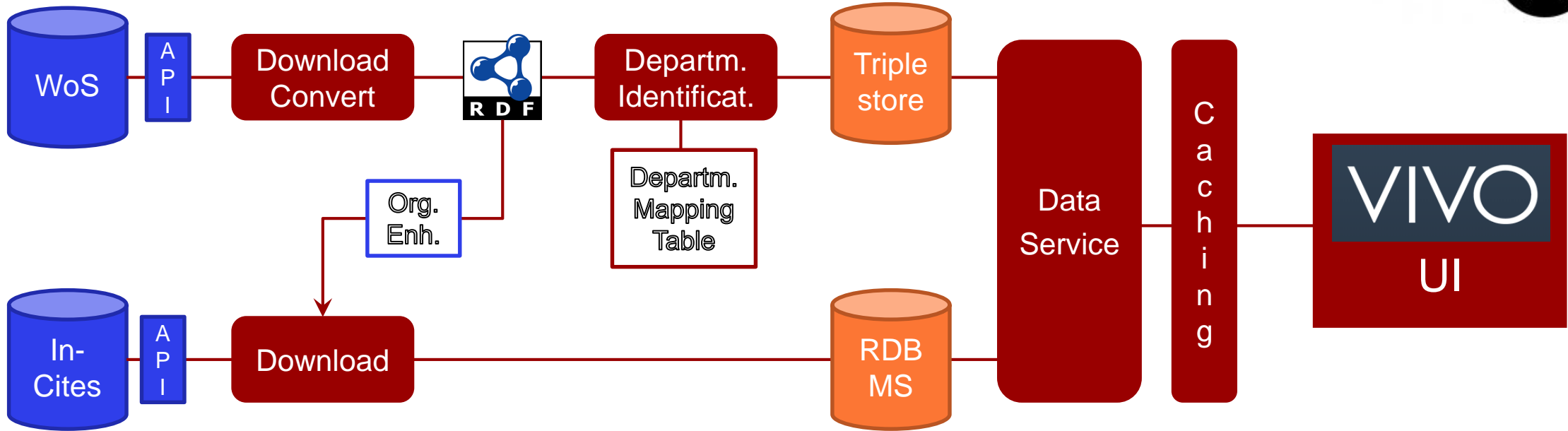
A test platform for several  
(in casu from Denmark) –  
university analytics and vis



# Dataflow of the WoS-VIVO - DTU RAP



Up & Running





# Demo of WoS VIVO DTU Research Analytics Platform



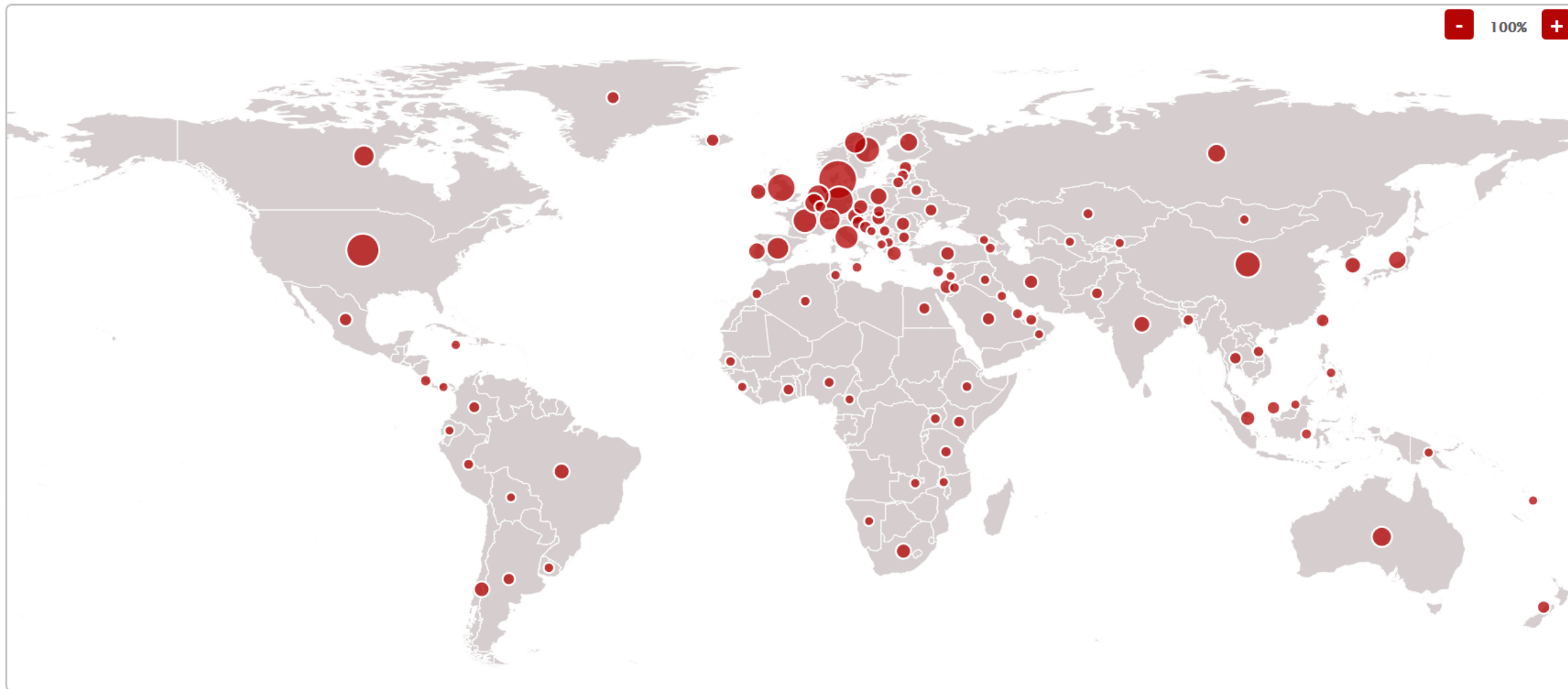
## Explore the university's external collaboration

Collaboration as reflected in co-publications with external partners.  
All paths below lead to a full co-publication report for a given collaboration partner.  
Explore the university's collaboration at university level or department level.

[World map](#)[Country – browse or search](#)[Partner – browse or search](#)[Funder – browse or search](#)[Subject – browse or search](#)

[Ext. collaboration](#) > Entire university > World map > From 2014 - 2019

Zoom using your mouse scroll wheel, or the controls top right, and select a country.



[Ext. collaboration](#) > [Entire university](#) > [World map](#) > [Norway](#) > From 2014 – 2019

| Collaboration partners ▾ <input type="text" value="Type here to shorten list"/> | Co-publications ▲ |
|---|-------------------|
| <a href="#">Norwegian University of Science &amp; Technology (NTNU)</a>         | 255               |
| <a href="#">University of Oslo</a>  | 233               |
| <a href="#">University of Bergen</a>  | 73                |
| <a href="#">Institute of Marine Research – Norway</a>                           | 71                |
| <a href="#">SINTEF</a>  | 69                |
| <a href="#">UiT The Arctic University of Tromsø</a>                             | 67                |
| <a href="#">Norwegian University of Life Sciences</a>                           | 58                |
| <a href="#">Norwegian Veterinary Institute</a>                                  | 42                |
| <a href="#">Norwegian Institute for Water Research (NIVA)</a>                   | 39                |
| <a href="#">University of Agder</a>   | 21                |
| <a href="#">Norwegian Polar Institute</a>                                       | 19                |
| <a href="#">Norwegian Institute Nature Research</a>                             | 16                |
| <a href="#">Statoil</a>   | 13                |
| <a href="#">Norwegian Institute of Public Health (NIPH)</a>                     | 12                |
| <a href="#">Universitetet i Stavanger</a>                                       | 12                |
| <a href="#">National Hospital Norway</a>  | 10                |
| <a href="#">Norwegian Meteorological Institute</a>                              | 10                |

DTU collaboration with Norwegian University of Science & Technology (NTNU), Norway from 2014 to 2019

255 co-publications in 108 subject categories

[Show list](#) of all publications since 2007

### Compare key output and impact indicators

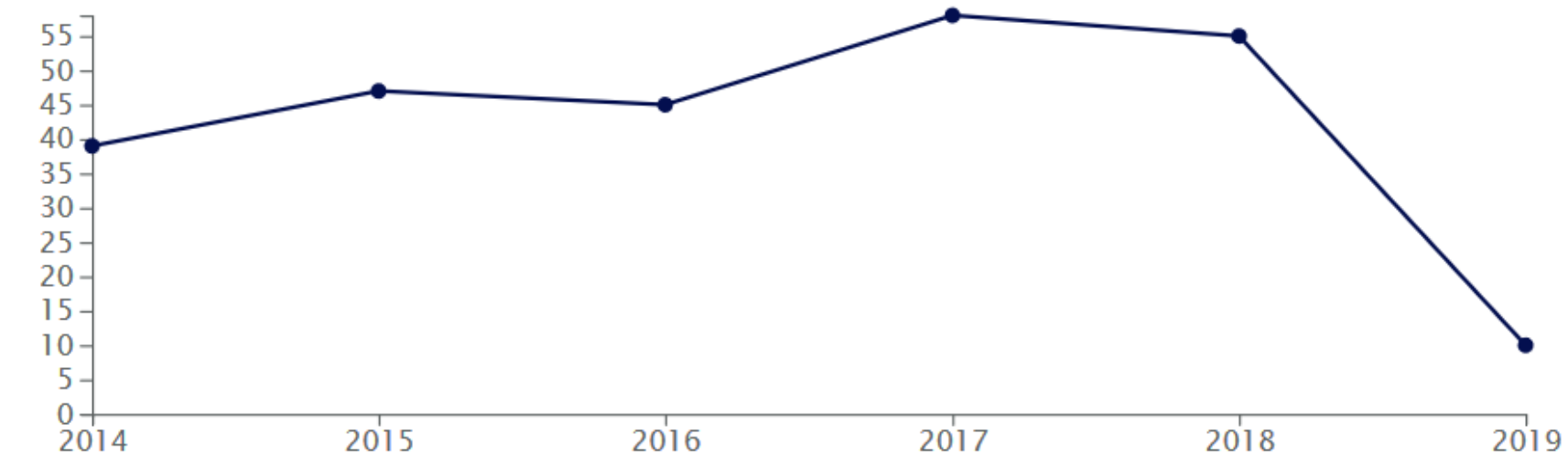
|  | Partner | DTU     |
|--|---------|---------|
| Number of publications                             | 20 309  | 20 224  |
| Number of citations                                | 120 532 | 195 400 |
| Simple citation impact (citations / publication)   | 5.9     | 9.7     |
| Normalised citation impact (global average 1.0) ⓘ  | 1.52    | 1.51    |
| % of publications in top 10% most cited ⓘ          | 13.1%   | 15.2%   |
| % of publications in top 1% most cited ⓘ           | 1.5%    | 2.2%    |
| % of publications with industry collaboration      | 8.6%    | 8.5%    |
| % of publications with international collaboration | 52.4%   | 62.3%   |

## Compare the annual publication output

| Year  | Partner | DTU   | Co-pubs |
|-------|---------|-------|---------|
| 2014  | 3 667   | 3 682 | 39      |
| 2015  | 3 878   | 3 974 | 47      |
| 2016  | 4 163   | 4 141 | 45      |
| 2017  | 4 497   | 4 337 | 58      |
| 2018* | 3 905   | 3 870 | 55      |
| 2019* | 199     | 220   | 10      |

\* The number of publications for a year will not be complete until the middle of the following year due to latency of indexing publications in Web of Science.

### Number of co-publications per year

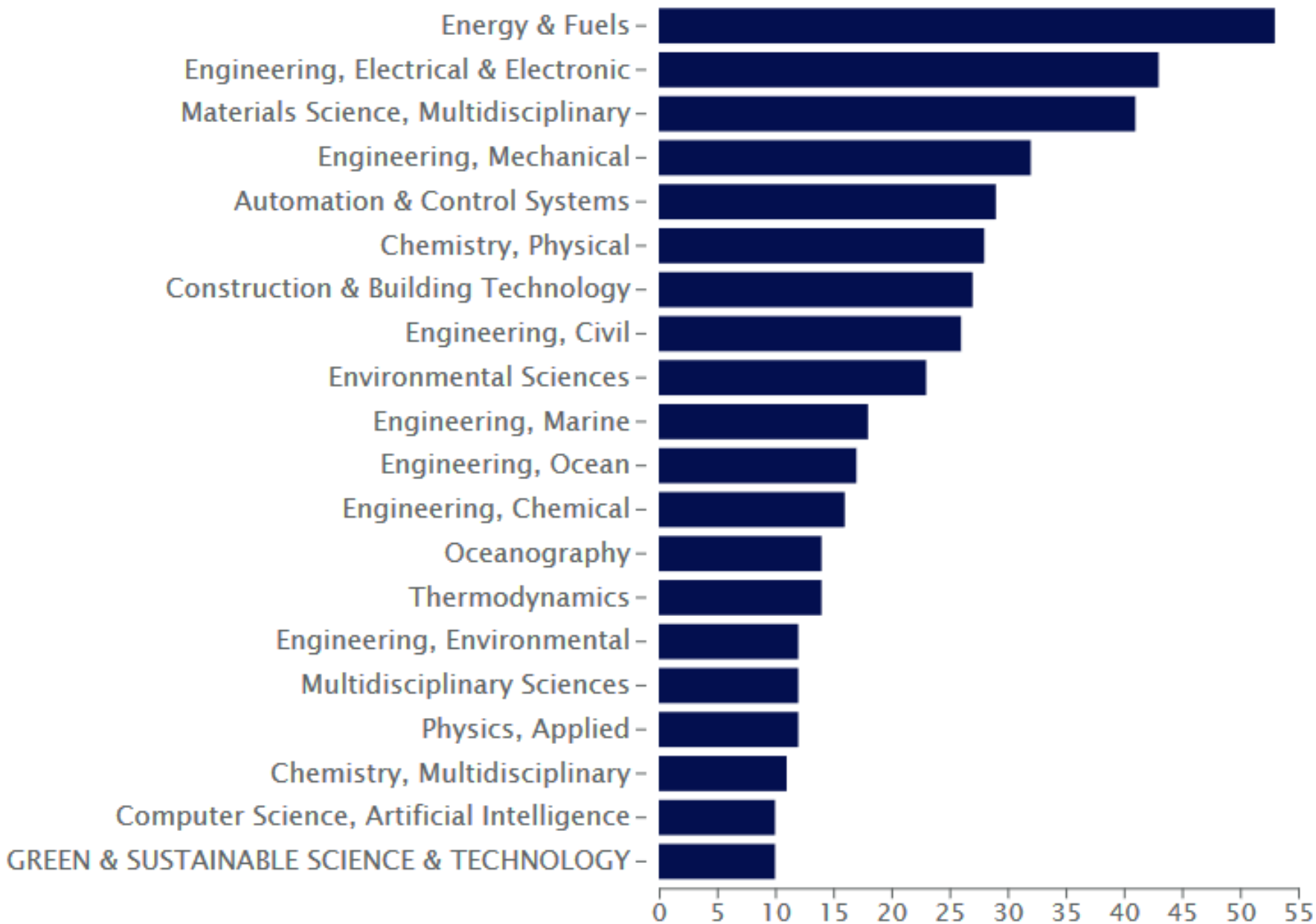


## Compare institutional top research subjects

| Research publication subjects               | Partner ▼ |      | DTU ▼ |      | Co-pubs |
|---|-----------|------|-------|------|---------|
| Compare partner and DTU                     | Publ.     | Rank | Publ. | Rank |         |
| Engineering, Electrical & Electronic        | 1 589     | 1    | 2 313 | 1    | 28      |
| Energy & Fuels                              | 1 237     | 2    | 1 878 | 2    | 43      |
| Materials Science, Multidisciplinary        | 1 095     | 3    | 1 668 | 3    | 24      |
| Engineering, Mechanical                     | 976       | 4    | 836   | 10   | 24      |
| Engineering, Civil                          | 701       | 5    | 447   | 22   | 21      |
| Clinical Neurology                          | 678       | 6    | 57    | 107  | 2       |
| Neurosciences                               | 673       | 7    | 194   | 57   | 1       |
| Environmental Sciences                      | 645       | 8    | 1 125 | 6    | 19      |
| Chemistry, Physical                         | 640       | 9    | 1 084 | 7    | 15      |
| Engineering, Chemical                       | 606       | 10   | 849   | 9    | 9       |
| Automation & Control Systems                | 572       | 11   | 208   | 54   | 17      |
| Public, Environmental & Occupational Health | 526       | 12   | 188   | 59   | 0       |
| Physics, Applied                            | 524       | 13   | 1 565 | 4    | 9       |
| Computer Science, Theory & Methods          | 510       | 14   | 385   | 28   | 2       |
| Mechanics                                   | 506       | 15   | 462   | 19   | 4       |
| Engineering, Ocean                          | 482       | 16   | 118   | 82   | 15      |
| Computer Science, Information Systems       | 467       | 17   | 238   | 47   | 2       |
| Engineering, Environmental                  | 445       | 18   | 705   | 13   | 11      |
| Oncology                                    | 437       | 19   | 141   | 70   | 3       |
| Ecology                                     | 426       | 20   | 308   | 34   | 3       |



## Number of publications by top research subjects





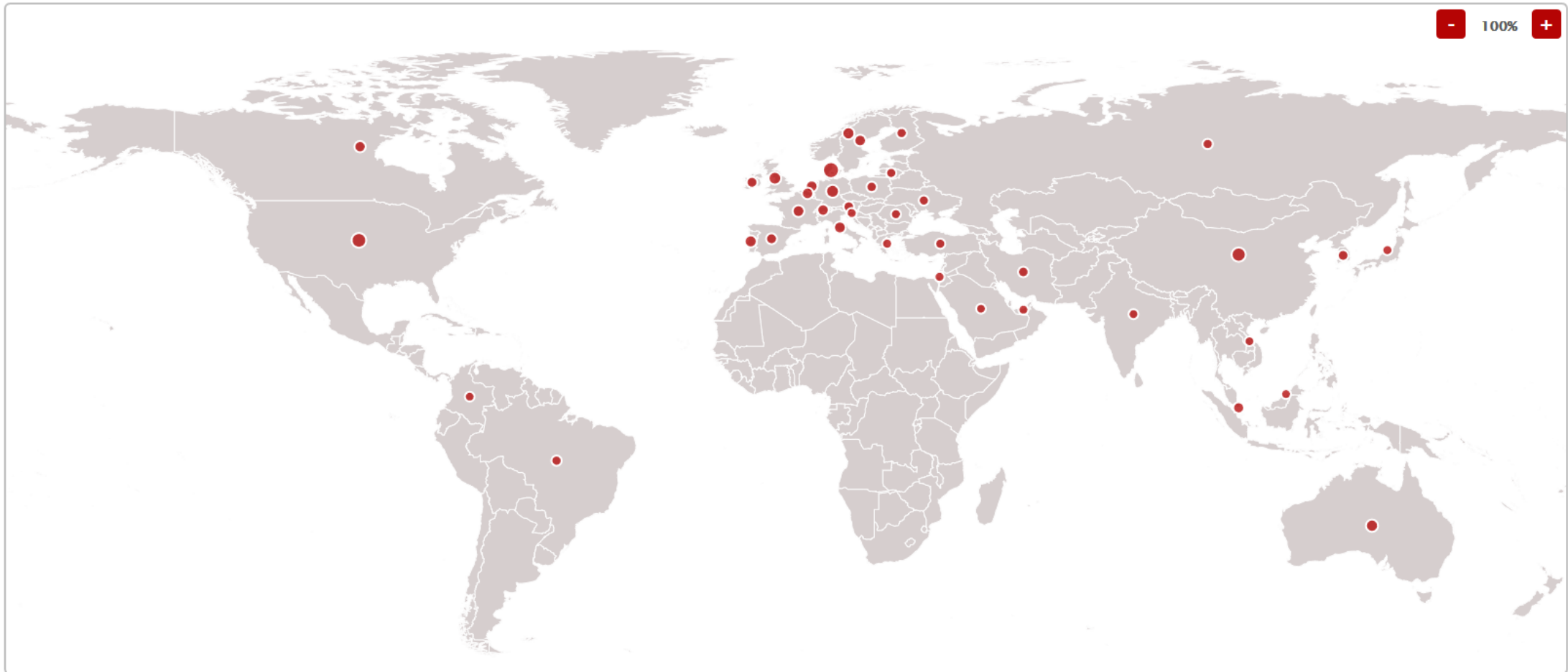
## Co-publications by department

| DTU department             | Publications       | Partner departments                    |
|----------------------------|--------------------|--|
| DTU Electrical Engineering | <a href="#">42</a> | <a href="#">Expand to show details</a> |
| DTU department unknown     | <a href="#">34</a> | <a href="#">Expand to show details</a> |
| DTU Mechanical Engineering | <a href="#">30</a> | <a href="#">Expand to show details</a> |
| DTU Civil Engineering      | <a href="#">25</a> | <a href="#">Expand to show details</a> |
| DTU Management Engineering | <a href="#">24</a> | <a href="#">Expand to show details</a> |
| DTU Wind Energy            | <a href="#">22</a> | <a href="#">Expand to show details</a> |
| DTU Compute                | <a href="#">20</a> | <a href="#">Expand to show details</a> |
| DTU Energy                 | <a href="#">18</a> | <a href="#">Expand to show details</a> |
| DTU Systems Biology        | <a href="#">15</a> | <a href="#">Expand to show details</a> |
| DTU Aqua                   | <a href="#">13</a> | <a href="#">Expand to show details</a> |
| DTU Bioinformatics         | <a href="#">12</a> | <a href="#">Expand to show details</a> |
| DTU Physics                | <a href="#">8</a>  | <a href="#">Expand to show details</a> |
| DTU Chemical Engineering   | <a href="#">7</a>  | <a href="#">Expand to show details</a> |
| DTU Chemistry              | <a href="#">4</a>  | <a href="#">Expand to show details</a> |
| DTU Food                   | <a href="#">4</a>  | <a href="#">Expand to show details</a> |
| DTU Danchip                | <a href="#">3</a>  | <a href="#">Expand to show details</a> |
| DTU Environment            | <a href="#">3</a>  | <a href="#">Expand to show details</a> |
| DTU Nanotech               | <a href="#">3</a>  | <a href="#">Expand to show details</a> |
| DTU Biosustain             | <a href="#">2</a>  | <a href="#">Expand to show details</a> |
| DTU Bioengineering         | <a href="#">1</a>  | <a href="#">Expand to show details</a> |
| DTU Fotonik                | <a href="#">1</a>  | <a href="#">Expand to show details</a> |
| DTU Nutech                 | <a href="#">1</a>  | <a href="#">Expand to show details</a> |
| Risø DTU                   | <a href="#">1</a>  | <a href="#">Expand to show details</a> |



[Ext. collaboration](#) > DTU Electrical Engineering > World map > From 2014 - 2019

Zoom using your mouse scroll wheel, or the controls top right, and select a country.



[Ext. collaboration](#) > [DTU Electrical Engineering](#) > [World map](#) > [United States](#) > [From 2014 – 2019](#)

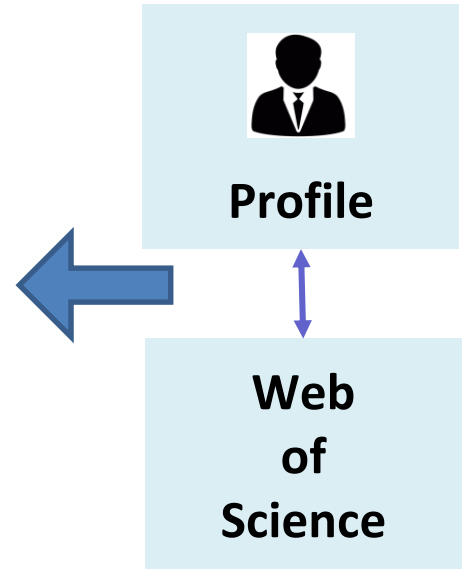
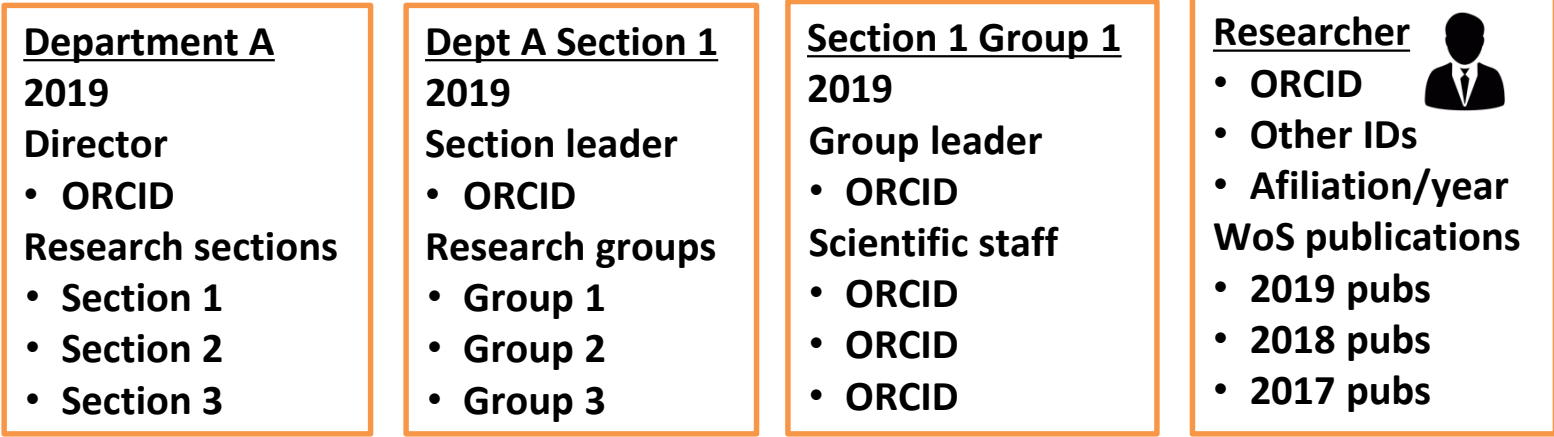
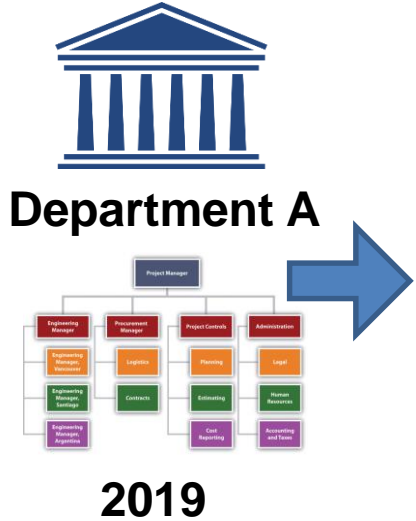
| Collaboration partners ▼                                    | Type here to shorten list | Co-publications ▲ |
|---|---------------------------|-------------------|
| <a href="#">General Electric</a>                            |                           | 41                |
| <a href="#">University of California System</a>             |                           | 18                |
| <a href="#">Stanford University</a>                         |                           | 17                |
| <a href="#">United States Department of Energy (DOE)</a>    |                           | 15                |
| <a href="#">University of Wisconsin System</a>              |                           | 12                |
| <a href="#">University of Wisconsin Madison</a>             |                           | 11                |
| <a href="#">Harvard University</a>                          |                           | 10                |
| <a href="#">Argonne National Laboratory</a>                 |                           | 9                 |
| <a href="#">University of Chicago</a>                       |                           | 9                 |
| <a href="#">University of Arizona</a>                       |                           | 7                 |
| <a href="#">Boston University</a>                           |                           | 5                 |
| <a href="#">Illinois Institute of Technology</a>            |                           | 5                 |
| <a href="#">Massachusetts Institute of Technology (MIT)</a> |                           | 5                 |
| <a href="#">State University System of Florida</a>          |                           | 5                 |
| <a href="#">University of California Berkeley</a>           |                           | 5                 |
| <a href="#">University of California San Diego</a>          |                           | 5                 |
| <a href="#">University of California San Francisco</a>      |                           | 5                 |
| <a href="#">University of Minnesota System</a>              |                           | 5                 |
| <a href="#">University of Minnesota Twin Cities</a>         |                           | 5                 |

# Next Pilot Module for WoS-VIVO - DTU RAP

## Stats Service for Researchers and Departments



ORCID



| Output & Impact | Dept | Sect | Grp | Res |
|-----------------|------|------|-----|-----|
| Indicator 1     | ✓    | ✓    | ✓   | ✓   |
| Indicator 2     | ✓    | ✓    | ✓   | ✓   |
| Indicator 3     | ✓    | ✓    | ✓   |     |
| Indicator 4     | ✓    | ✓    |     |     |
| Indicator 5     | ✓    |      |     |     |

# Plans for Dimensions VIVO – May 2019→Nov 2020



Dimensions  
Digital Science  
GRID

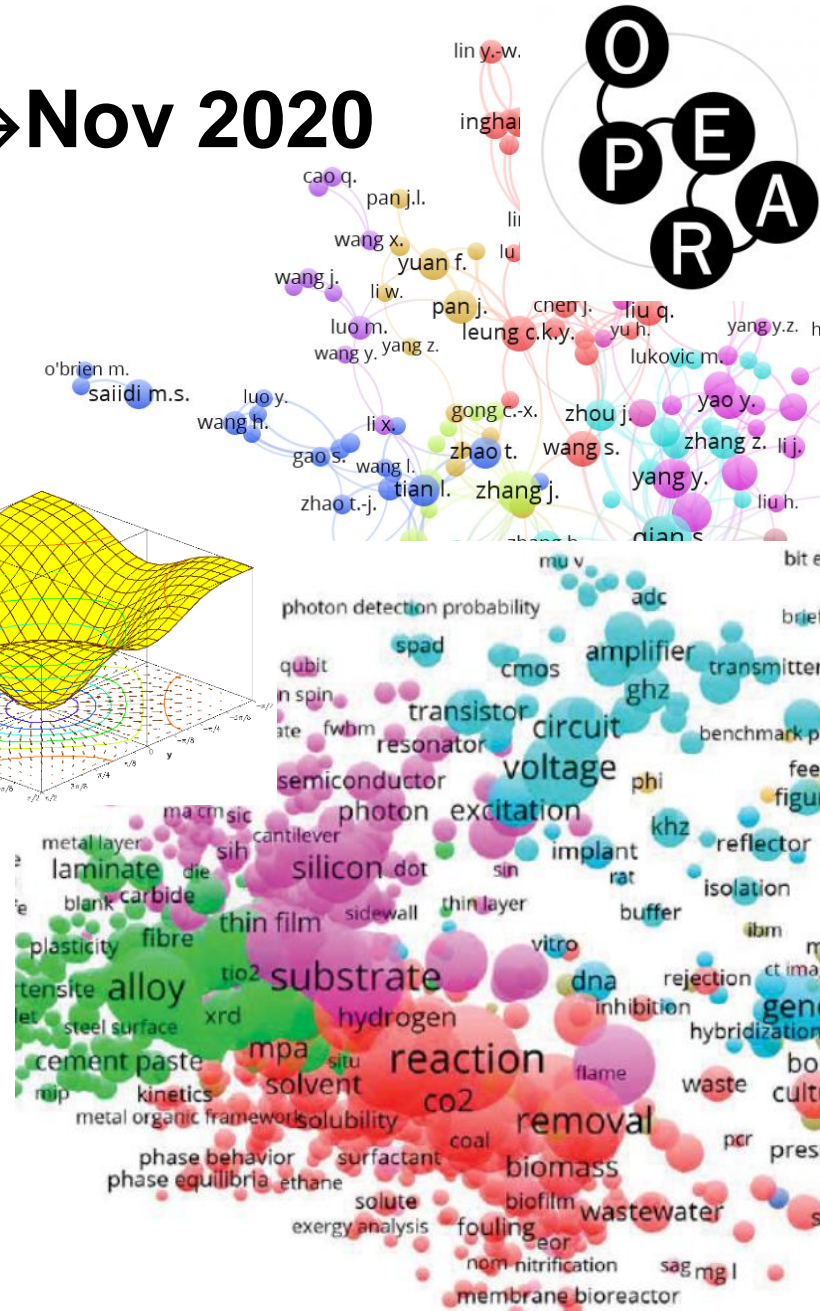
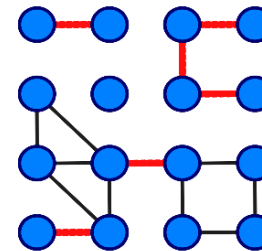
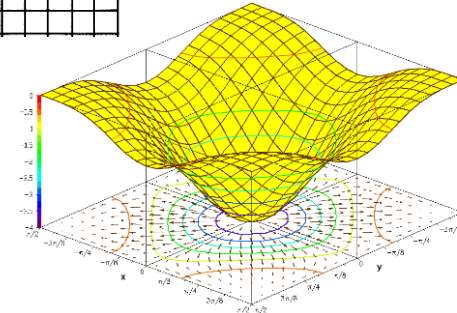
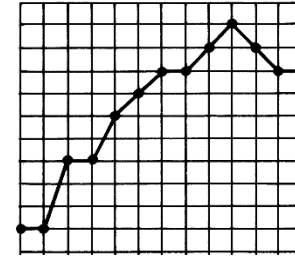
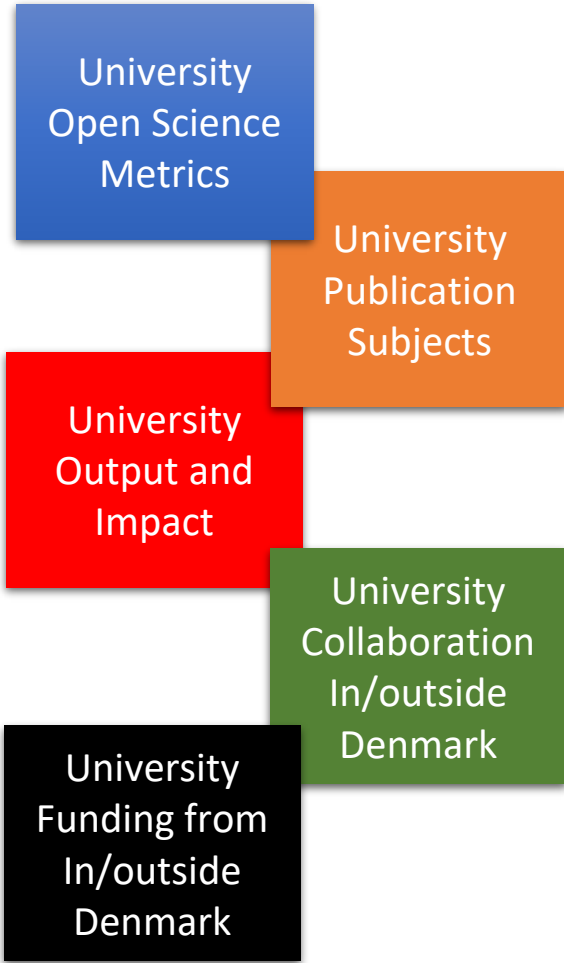


Dimensions DK  
? universities  
? u.hospitals

## Dimensions-VIVO

Pub. 2014-2017  
Cit. 2014-today

### VERY FIRST IDEAS:







**Thank you!**

**Any questions?**