

# Bibliometrics & Data Use Cases

## 2022 STUDENT DATA SCIENCE COMPETITION

Dong Joon Lee, Ph.D.

Office of Scholarly Communications

University Libraries

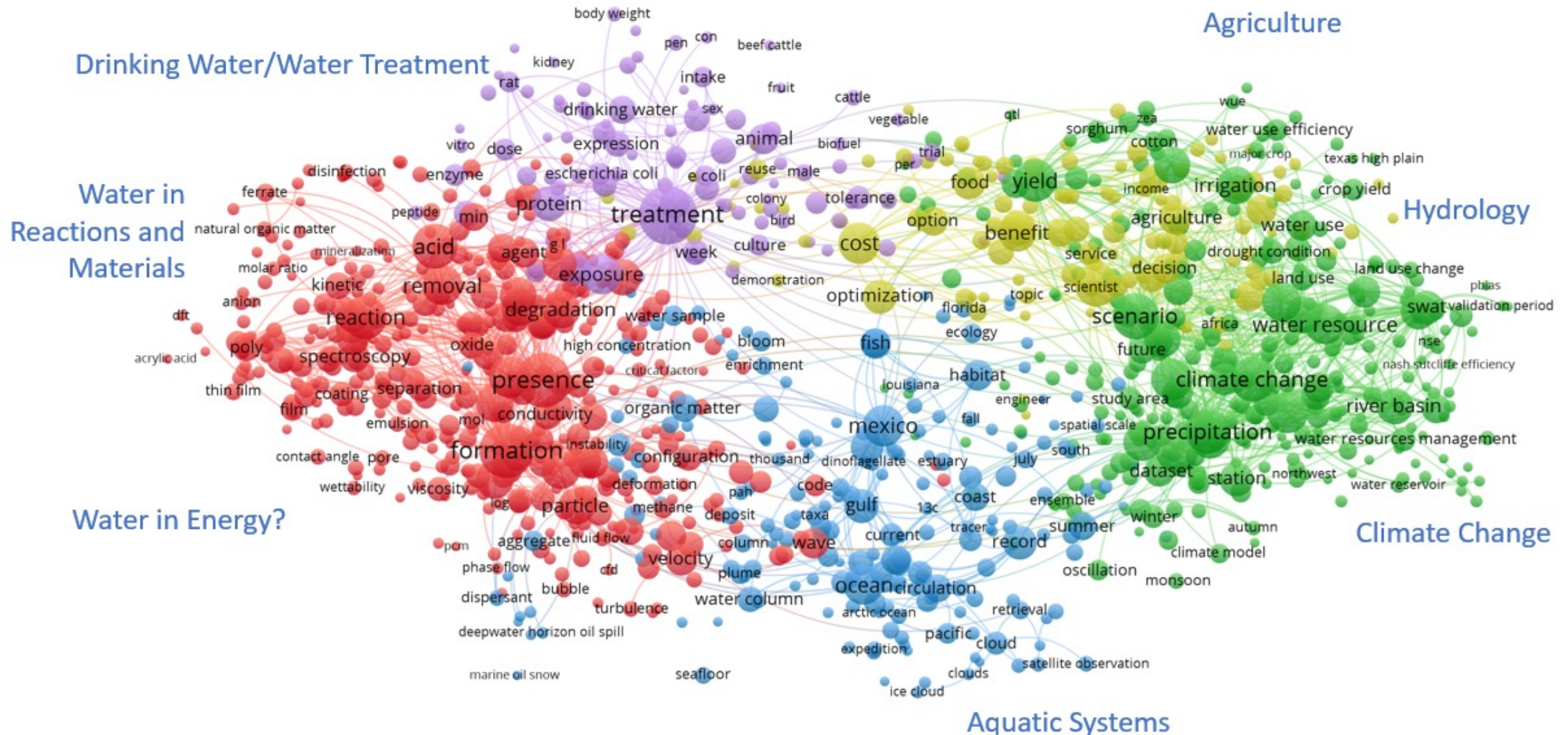
March 1, 2022

# Contents

- Bibliometrics and use cases
- Data and databases
- VOSviewer – Visualizing scientific landscapes

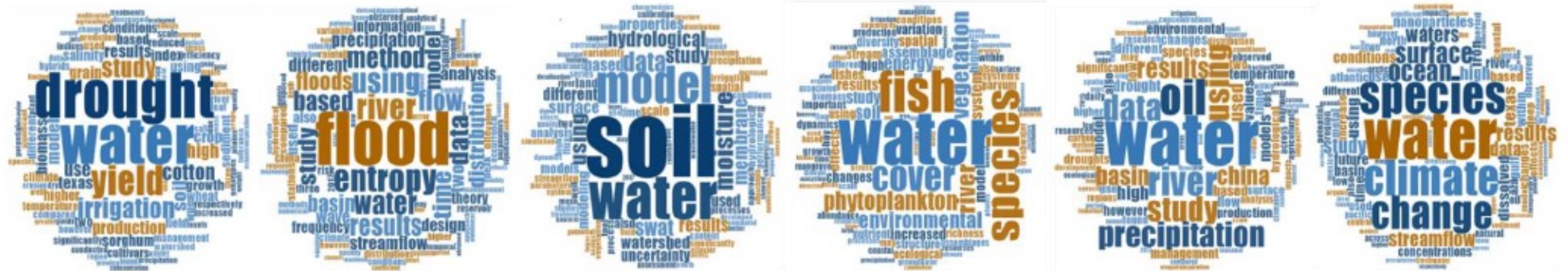


## Example 1 - Water-related research at Texas A&M University

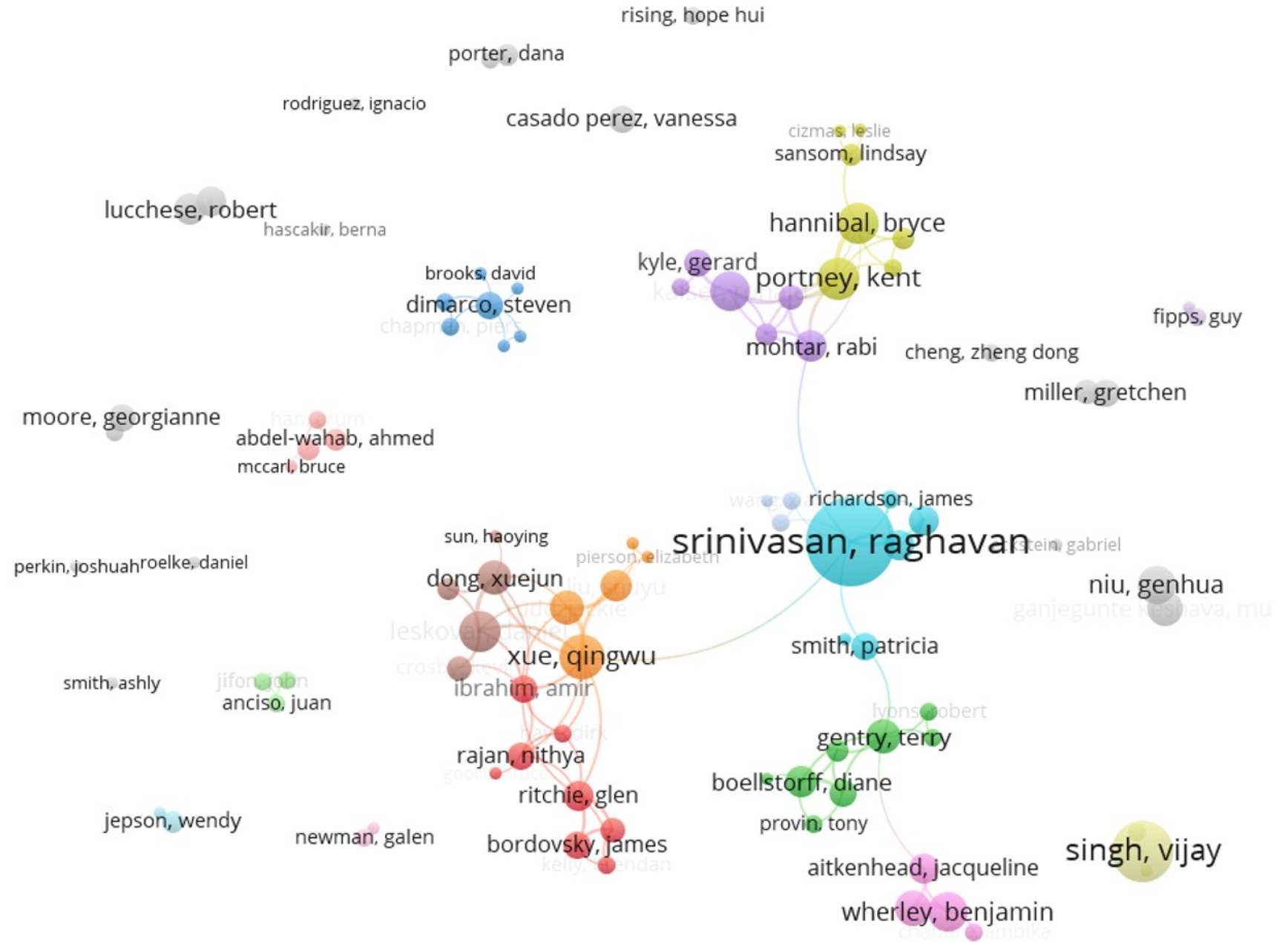




# Example 1 - Water-related research at Texas A&M University



# Example 1 - Water-related research at Texas A&M University



# Example 2 – Sustainability Research at Texas A&M University

**TEXAS A&M  
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HEALTH & ENVIRONMENT

## Texas A&M University Nationally Recognized For Sustainability Research

*The school has been named a top performer in the 2021 Sustainable Campus Index.*

By Lesley Henton, Texas A&M University Division of Marketing & Communications • NOVEMBER 9, 2021

SHARE    0 SHARE

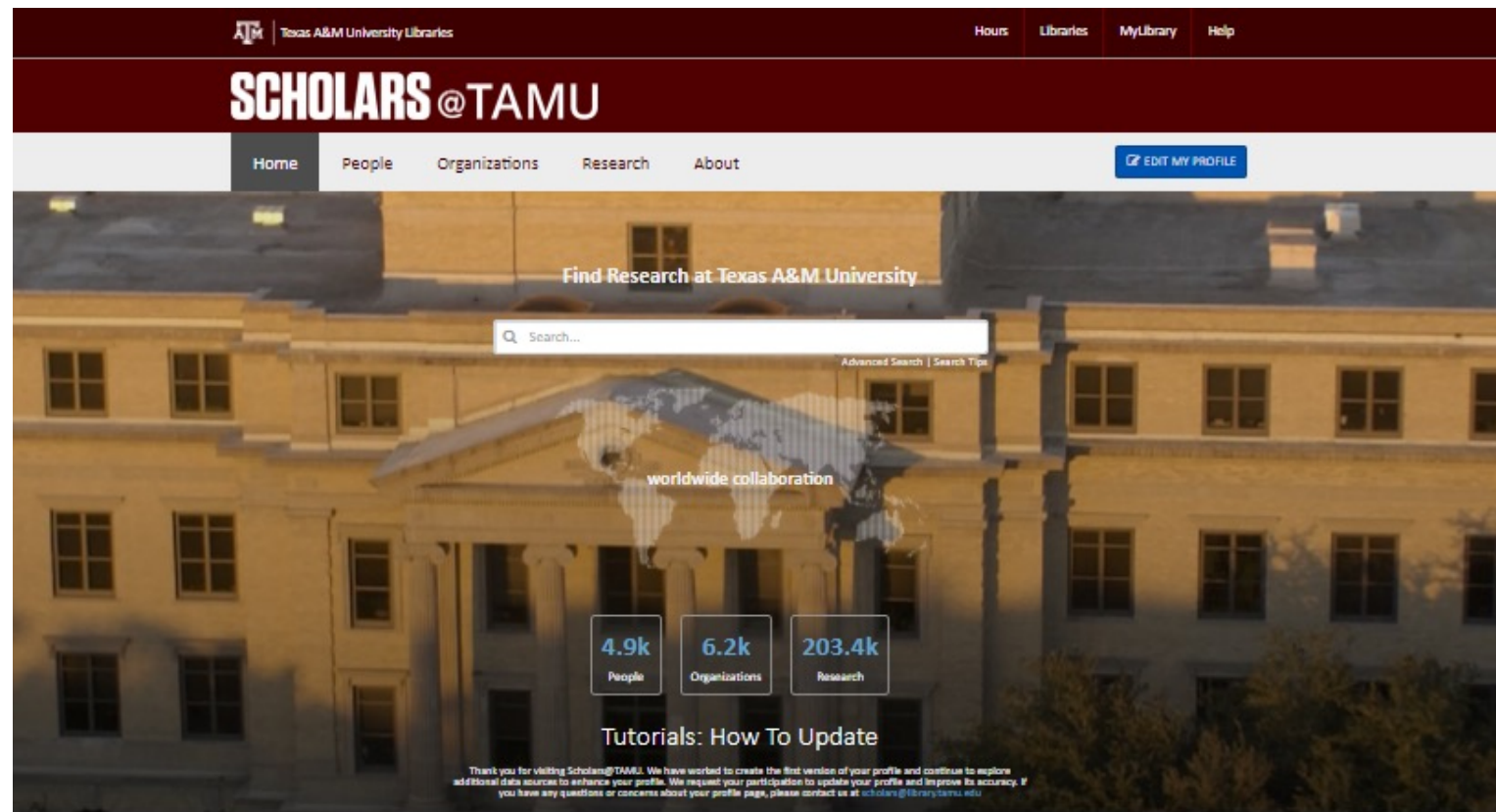


The Department of Bioenvironmental Sciences' vertical gardens.

*Sam Craft/Texas A&M Marketing & Communications*



# Example 2 – Sustainability Research at Texas A&M University





## Example 2 – Sustainability Research at Texas A&M University

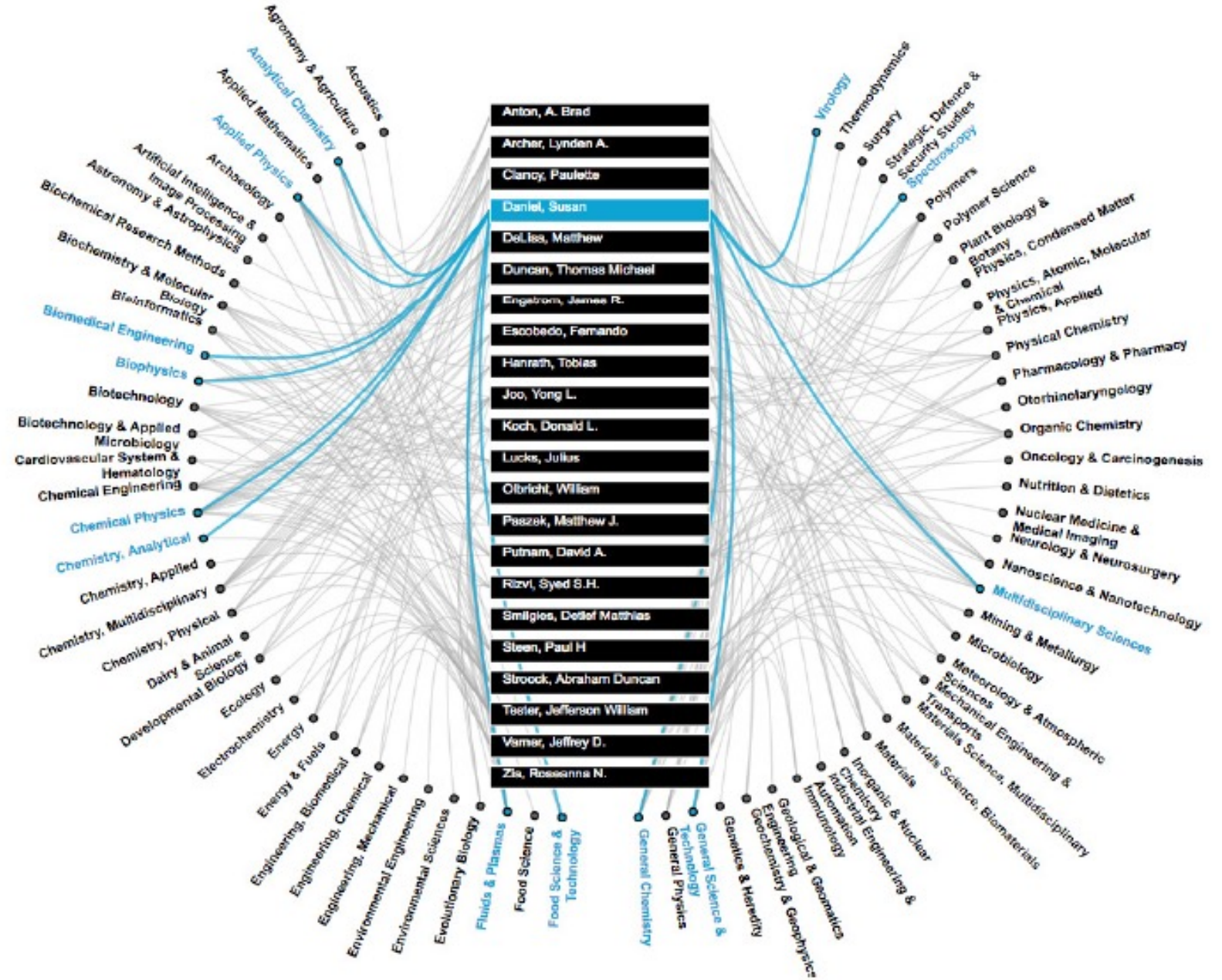
### TEXAS A&M RESEARCH PUBLICATIONS IN UN SDG, 2011 - AUGUST 2021



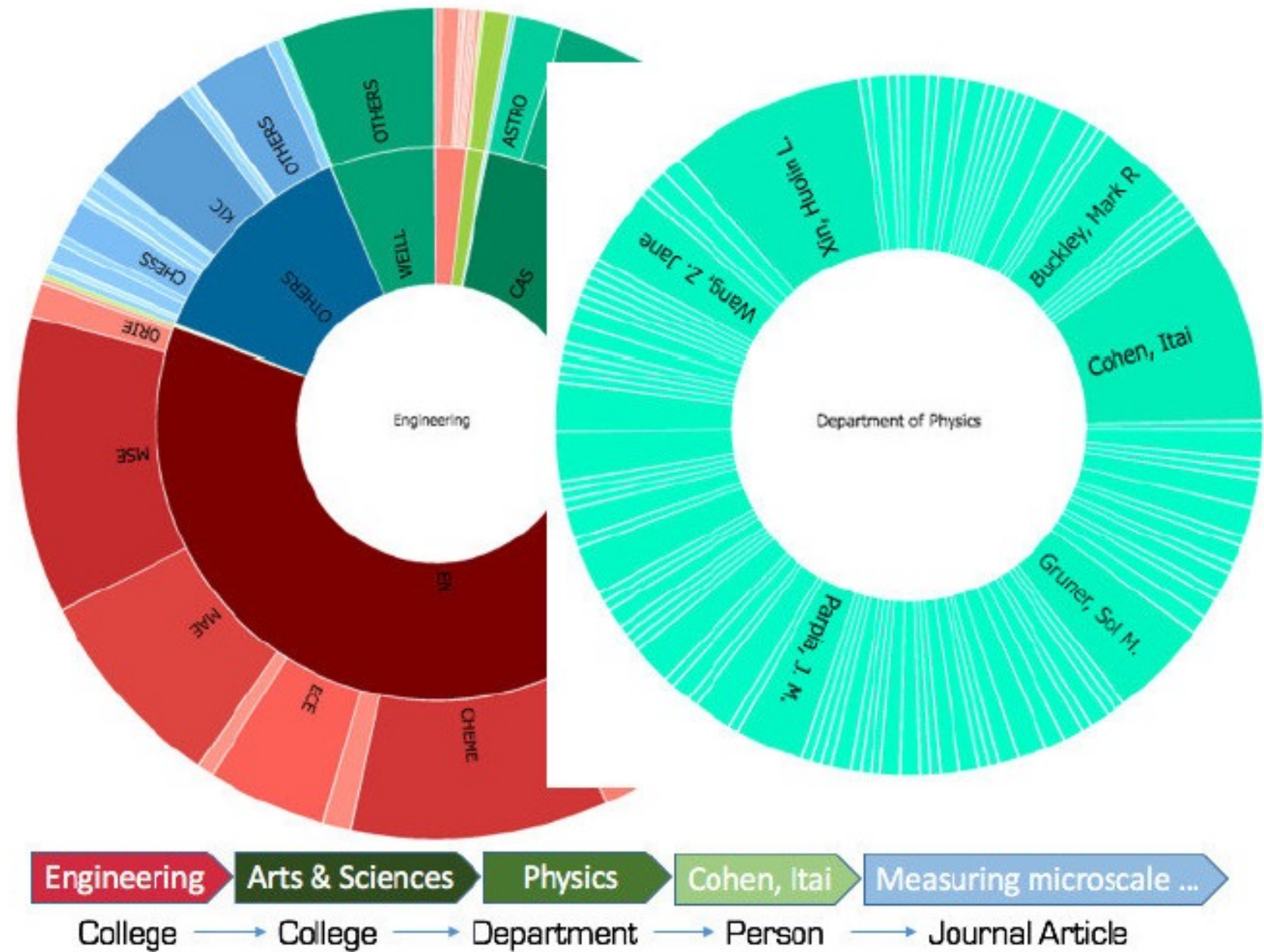
- SDG 1 No Poverty, 34
- SDG 3 Good Health and Well-Being, 1145
- SDG 5 Gender Equality, 14
- SDG 7 Affordable and Clean Energy, 2879
- SDG 9 Industry, Innovation and Infrastructure, 37
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- SDG 13 Climate Action, 1321
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- SDG 2 Zero Hunger, 178
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- SDG 6 Clean Water and Sanitation, 205
- SDG 8 Decent Work and Economic Growth, 245
- SDG 10 Reduced Inequalities, 149
- SDG 12 Responsible Consumption and Production, 127
- SDG 14 Life Below Water, 96
- SDG 16 Peace, Justice and Strong Institutions, 412

# Example 3 – Concept Map



Example 4 –  
Zoomable  
Sunburst  
Visualization





## Example 5 – Collaboration Map

### Browse global collaborations

Filter data by selecting an academic unit, subject area or publication year(s).

Filter by: Academic Unit

Filter by: Subject Area

Filter by: Publication Year

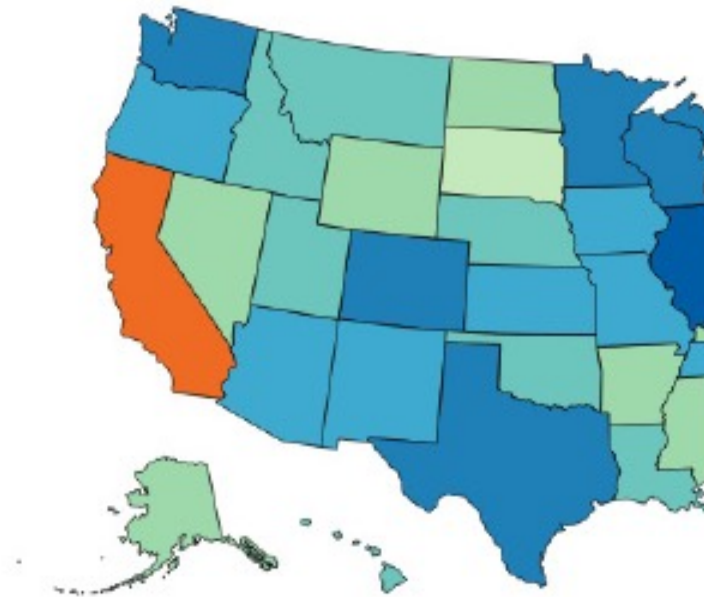
Clear Filter



### Global Collaborations

Now Showing: All

☐ World Map ☒ USA Map



California (893)

### Featured Cornell Researchers

Mahowald, Natalie M.	(28)
Schlom, Darrell	(22)
Fahey, Timothy James	(16)
Tong, Lang	(14)
Kelley, Michael Charles	(13)

### Featured Institutions

University of California, Berkeley	(182)
University of California, Davis	(124)
Stanford University	(99)

# Data for the competition

- Scholars@TAMU
  - <https://scholars.library.tamu.edu/vivo/>
  - API documentation: <https://api.library.tamu.edu/scholars-discovery/api>
  - Texas A&M Faculty Profile System
- Dimensions Analytics
  - <https://www.dimensions.ai/> (*Register with your TAMU Email address*)
  - The world's largest linked research information dataset (e.g., 124 million publications)
- Altmetric Explorer
  - <https://www.altmetric.com/explorer/login> (*Register with your TAMU Email address*)
  - Database keeping track of social/public engagement with research publications
- Web of Science, etc.

# SCHOLARS@TAMU

- Publications
  - People
  - Grants\_Awards
  - Courses
  - Organizations
- 
- Data (TAMU credential required):  
<https://drive.google.com/drive/folders/1ZtPJli6gmpUdc3dmmAhla2doMpw6z2yA?usp=sharing>



# SCHOLARS@TAMU

<https://scholars.library.tamu.edu/>

- People

- People\_affiliation:  
Texas A&M affiliation
- People\_overview:  
research blub
- People\_education:  
Educational  
background
- People\_subject\_areas  
: Faculty self-assigned  
Library of Congress  
subject headings

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Find Research at Texas A&M University

Search People...

Advanced Search | Search Tips

**Lee, Dong Joon**

Associate Professor

**Positions:**  
Associate Professor, University Libraries, Texas A&M University

[Single Page Bio](#)  
[Profile Summary](#)  
[djlee@library.tamu.edu](mailto:djlee@library.tamu.edu)  
[1 979 862 4661](tel:19798624661)

[Co-author Network](#)  
[Map of Science](#)  
[Co-investigator Network](#)

**Websites**  
[Personal Website](#)  
[Google Scholar](#)  
[Library Profile](#)  
[Altmetric report](#)  
[Dimensions Author Page](#)

**ORCID**  
0000-0001-8994-163X

**Research Areas:**  
Semantic Web, Authority files (Information retrieval), Information science--Research, Metadata, Communication in learning and scholarship, Mixed methods research, Linked data, Ontologies (Information retrieval), Open access, Qualitative research, Online identities

**Twitter**  
Tweets by @leedjoooni

**Overview**

I have an interest in the core values and benefits of socio-technical systems, information organization tools (e.g., metadata design, identifiers, linked data, and ontologies), and scholarly communications (e.g., research information management systems, repositories, scholarly impact, and digital curation). My research explores questions about users' understanding and experience with data/information management practices in different contexts, the design and implementation of information and data management tools and methods, and the reuse data stored in information management systems.

**Education And Training**

Ph.D. in Information Studies, Florida State University - (Tallahassee, Florida, United States) 2005

M.S. in Information Management, University of Washington - (Seattle, Washington, United States) 2010

B.S. in Computer Information Systems, Grove City College - (Grove City, Pennsylvania, United States) 2008

**Selected Publications**

**Academic Articles** 13

# SCHOLARS@TAMU

- Publications

- Pub\_overview: publication metadata (e.g., title, author, journal name, etc.)
- Pub\_abstract: publication abstract (text)
- Pub\_subject\_journal\_wos: Web of Science subject headings assigned to journals
- Pub\_author\_institutions: authors' institution names
- Pub\_UN SDG: UN Sustainable Development Goals tagged to journal articles

Lee, D. J., & Stvilia, B. (2017). Practices of research data curation in institutional repositories: A qualitative view from repository staff. *PLoS ONE*. 12(3), e0173987-e0173987.

Practice qualitative

Overview

Abstract

The importance of research to build a descriptive university identity

data curation

Authors

Lee, Dor

4.9k People

6.2k Organizations

204.1k Research

Tutorials: How To Update

Thank you for visiting Scholars@TAMU. We have worked to create the first version of your profile and continue to explore additional data sources to enhance your profile. We request your participation to update your profile and improve its accuracy. If you have any questions or concerns about your profile page, please contact us at [scholars@library.tamu.edu](mailto:scholars@library.tamu.edu)

Most recently updated faculty profiles by Texas A&M University

Carl Gagliardi Professor

Jonathan Felts Associate Professor

David Schechter Professor

Jerome Schubert Associate Professor

Samuel Noyes Associate Professor

Haik Nazrabadi Associate Professor

Nobuo Morita Professor

Click to see the faculty profile

UN Sustainable Development Goals

The Member States of the United Nations adopted the Sustainable Development Goals by General Assembly in September 2015. The aim of these goals is to end all forms of poverty, fighting inequalities and tackling climate change while ensuring that no one is left behind. Click on a goal to the right to discover how Texas A&M researchers and their work are contributing towards these goals.

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

# SCHOLARS@TAMU

- Grants\_Awards
  - Grant\_overview: grant metadata (e.g., title, funding agency, researcher roles)
  - Grant\_abstract: grant abstract (text)
  - Award\_overview: award names and conferred organization



[About](#) [Academic Background](#) [Publications](#) [Software](#) [Grants/Awards](#) [Contact](#) [View All](#)

**Researcher On**

**Co-Principal Investigator 2**

Toward Engaging Researchers in Research Identity Data Curation awarded by Institute of Museum and Library Services - (Washington D.C., District of Columbia, United States) 2016 - 2017

Social Aspects of Participation in Online Research Identity Management Systems awarded by Online Computer Library Center - (Dublin, Ohio, United States) 2015 - 2016

**Awards And Honors**

Irene B. Hoadley Professorship conferred by Texas A&M University - (College Station, Texas, United States) - Two year term award 2018

Early Scholars Program Recipient conferred by Research Data Alliance - (Dublin, Ireland) - Coordinated by RDA/US (Indiana University - Bloomington) 2014



# SCHOLARS@TAMU

- Courses
  - Courses\_overview: course metadata (e.g., course title, course number)



[About](#) [Academic Background](#) [Publications](#) [Grants/Awards](#) [Teaching](#) [Works By Students](#)  
[Contact](#) [View All](#)

## Recent Teaching Activities

ITDE691 Research Instructor

PETE321 Formation Evaluation Instructor

PETE401 Reservoir Simulation Instructor

PETE402 Integ Asset Development Instructor

PETE485 Directed Studies Instructor

# SCHOLARS@TAMU

- Organizations

- Organization\_local : local Texas A&M organization list

Professor

Positions:

Assistant Director, Center for Systematic Reviews and Research Syntheses, University Libraries

Member, Engineering Education Research Taskforce, College of Engineering

Director, Office of Scholarly Communications and Professor, University Libraries, Texas A&M University

Professor, Geology and Geophysics, College of Geosciences

- Organization\_external: external organization list

Researcher On

Principal Investigator 1

The Professional Learning Community Model for Alternative Pathways in Teaching Science and Mathematics awarded by National Science Foundation - (Arlington, Virginia, United States) 2004 - 2011



<https://www.dimensions.ai/>

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Dimensions

2022 Publication Year

National Natural Science Found... Funder

United States Country of Funder

Cancer Free text in full data

Save / Export

FILTERS

FAVORITES

GROUPS

PUBLICATION YEAR

2022 140

RESEARCHER

FUNDER

National Natural Science Foundation of China 140

Ministry of Science and Technology of China 35

National Cancer Institute (NCI) 31

National Institute of General Medical Sciences 15

Directorate for Mathematical & Physical Sciences 13

National Institute on Aging (NIA) 11

National Institute of Environmental Health Sciences 10

China Postdoctoral Science Foundation 10

Directorate for Engineering (NSF ENG) 10

National Institute of Diabetes and Digestive and Kidney Diseases 9

National Institute of Allergy and Infectious Diseases 8

COUNTRY OF FUNDER

China 140

United States 140

Belgium 3

Australia 1

Switzerland 1

Germany 1

Spain 1

PUBLICATIONS 140

DATASETS 0

GRANTS 0

PATENTS 0

CLINICAL TRIALS 0

POLICY DOCUMENTS selected filter not applicable

Show abstract Sort by: Relevance

Title, Author(s), Bibliographic reference - About the metrics See attention in Altmetric Explorer

Small Molecule MMR162 Induces Ferroptosis and Inhibits Metastasis in Pancreatic Cancer via Degradation of Ferritin Heavy Chain and Mutant p53 Junhui Li, Rati Lama, Samuel L Galster, Joseph R Inigo, Jin Wu, Dhyan Chandra, Sherry R Chemler, Xinjiang Wang 2022, Molecular Cancer Therapeutics - Article High frequency of KRAS and TP53 mutations is a unique genetic feature of pancreatic ductal adenocarcinoma (PDAC). TP53 mutation not only renders PDAC resistance to chemotherapies but also drives PDAC ... more Altmetric 1 Add to Library Find Text TAMU

Development of novel aptamer-based targeted chemotherapy for bladder cancer Yao Wang, Yang Zhang, Peng-Chao Li, Jiajie Guo, Fan Huo, Jintao Yang, Ru Jia, Juan Wang, Qijiu Huang, Dan Theodorescu, Hanyan... 2022, Cancer Research - Article Bladder cancer (BC) is common worldwide, with most patients presenting with non-muscle invasive disease. Multiple intravesical recurrences lead to reduced quality of life and high costs for patients w... more Altmetric 2 Add to Library Find Text TAMU

Clinical summary of fibroblast activation protein inhibitor-based radiopharmaceuticals: cancer and beyond Mengting Li, Muhsin H. Younis, Yongxue Zhang, Weiwei Cai, Xiaoli Lan 2022, European Journal of Nuclear Medicine and Molecular Imaging - Article Fibroblast activation protein (FAP) is a type II membrane-bound glycoprotein which is overexpressed in cancer-associated fibroblasts and activated fibroblasts at wound healing/inflammatory sites. Sinc... more Altmetric 2 Add to Library Find Text TAMU

Loss of function of GATA3 induces basal-like mammary tumors Feng Bai, Chenglong Zheng, Xiong Liu, Ho Lam Chan, Shiqin Liu, Jinshan Ma, Sijia Ren, Wei-Guo Zhu, Xin-Hai Pei 2022, Theranostics - Article Purpose: GATA3 is a transcription factor essential for mammary luminal epithelial cell differentiation. Expression of GATA3 is absent or significantly reduced in basal-like breast cancers. Gata... more View PDF Add to Library Find Text TAMU

A Novel Metabolic Reprogramming Strategy for the Treatment of Diabetes-Associated Breast Cancer

2022 Publication Year

National Natural Science Found... Funder

United States Country of Funder

Cancer Free text in full data

Save / Export

Workflow

Support

Dong Joo...

ANALYTICAL VIEWS

PUBLICATIONS

RESEARCH CATEGORIES

OVERVIEW

OPEN ACCESS

RESEARCHERS

SOURCE TITLES

PUBLISHERS

FUNDERS

RESEARCH ORGANIZATIONS

PLACES

COMPARE

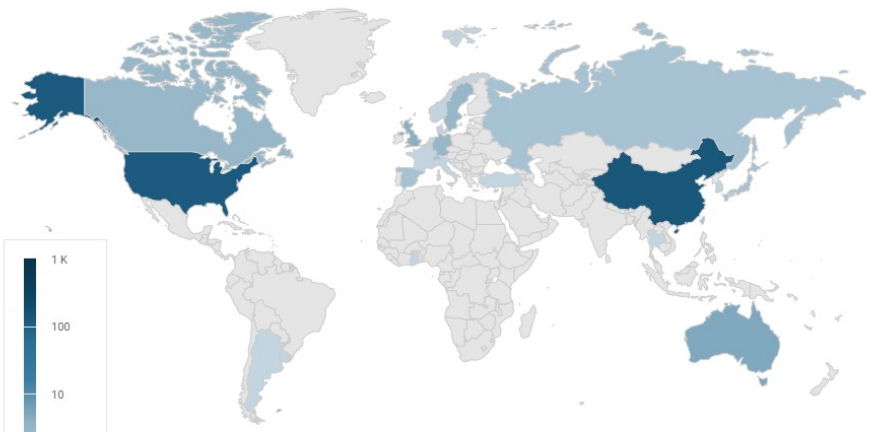
Places related to your search About indicators

Aggregated Geomap Timeline Heatmap Network

Publications Indicator

Level: World Chart Table

+ -



1 K  
100  
10  
1





<https://www.altmetric.com/explorer/login>

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The screenshot displays the Altmetric website interface, showing search results for research outputs and mentions. The top navigation bar includes tabs for HIGHLIGHTS, RESEARCH OUTPUTS, TIMELINE, DEMOGRAPHICS, MENTIONS, MENTION SOURCES, and JOURNALS. The main content area is divided into two sections: RESEARCH OUTPUTS and MENTIONS.

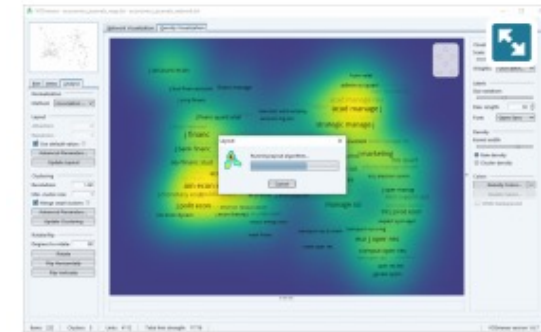
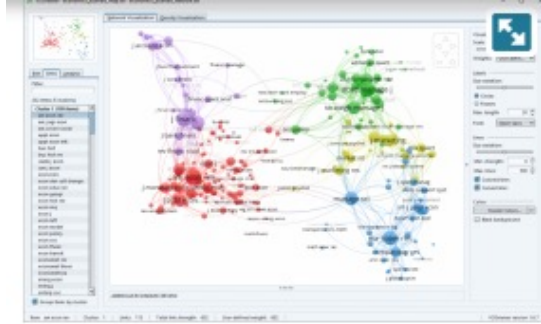
**RESEARCH OUTPUTS:** This section shows a list of research outputs sorted by Altmetric Attention Score (Highest first). The results are displayed in a grid format, with each entry showing a circular Altmetric logo, the title of the research output, and the journal it was published in. The first entry is "Identifying airborne transmission as the dominant route for the spread of COVID..." from the Proceedings of the National Academy of Sciences of the United States of America, June 2020, with an attention score of 2168. Other entries include "Unprocessed Red Meat and Processed Meat Consumption: Dietary Guideline..." from Annals of Internal Medicine, October 2019, and "Origins and genetic legacy of prehistoric dogs" from Science, October 2020.

**MENTIONS:** This section shows a list of mentions for the research outputs. The results are displayed in a grid format, with each entry showing a circular Altmetric logo, the title of the mention, and the source it was published in. The first entry is "Associations of cardiovascular..." from The Lancet, with an attention score of 7698. Other entries include "Estimating the science" from Science, Article in Science, A, and "Observation of Neutron Star-B" from The Astro.

The interface also includes a search bar at the top right, a sidebar on the left with navigation icons, and a bottom section with a timeline and a list of mentions. The timeline shows a date of 2022-02-14 at 6:13 PM UTC, and the list of mentions includes a news story published by The Conversation and Global Advisors, both titled "How the intellectual property monopoly has impeded an effective response to Covid-19".


# VOSviewer – Visualizing Scientific Landscapes

- <https://www.vosviewer.com/>
- Download data from:
  - Dimensions Analytics
  - Web of Science
  - PubMed Database
- Create your own data file:
  - Research Information Systems (.ris) format



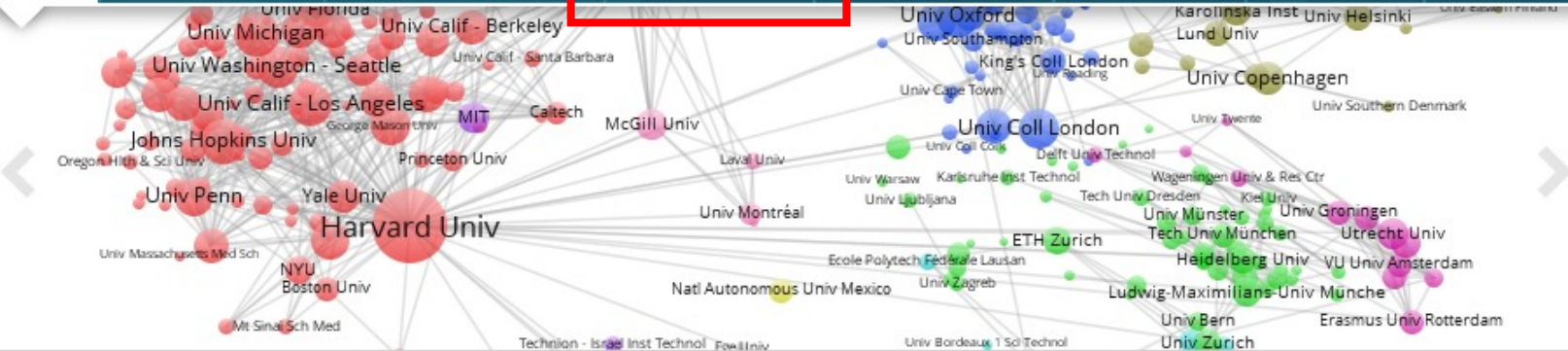
# VOSviewer

## - Download

 **VOSviewer**  
Visualizing scientific landscapes

Leiden University | CWTS | CWTS B.V. | Other CWTS sites ▾

Home | Features ▾ | Getting Started | **Download** | Publications | Products | Contact



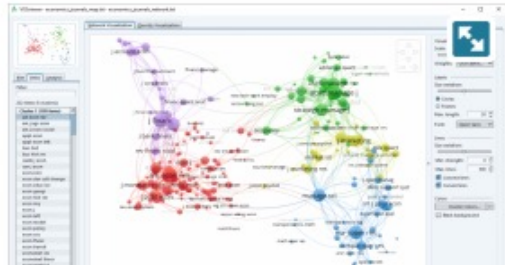
## Welcome to VOSviewer


VOSviewer is a software tool for constructing and visualizing bibliometric networks. These networks may for instance include journals, researchers, or individual publications, and they can be constructed based on citation, bibliographic coupling, co-citation, or co-authorship relations. VOSviewer also offers text mining functionality that can be used to construct and visualize co-occurrence networks of important terms extracted from a body of scientific literature.

### VOSviewer version 1.6.18

VOSviewer version 1.6.18 was released on January 24, 2022. The following features have been added:

- Creating maps based on OpenAlex

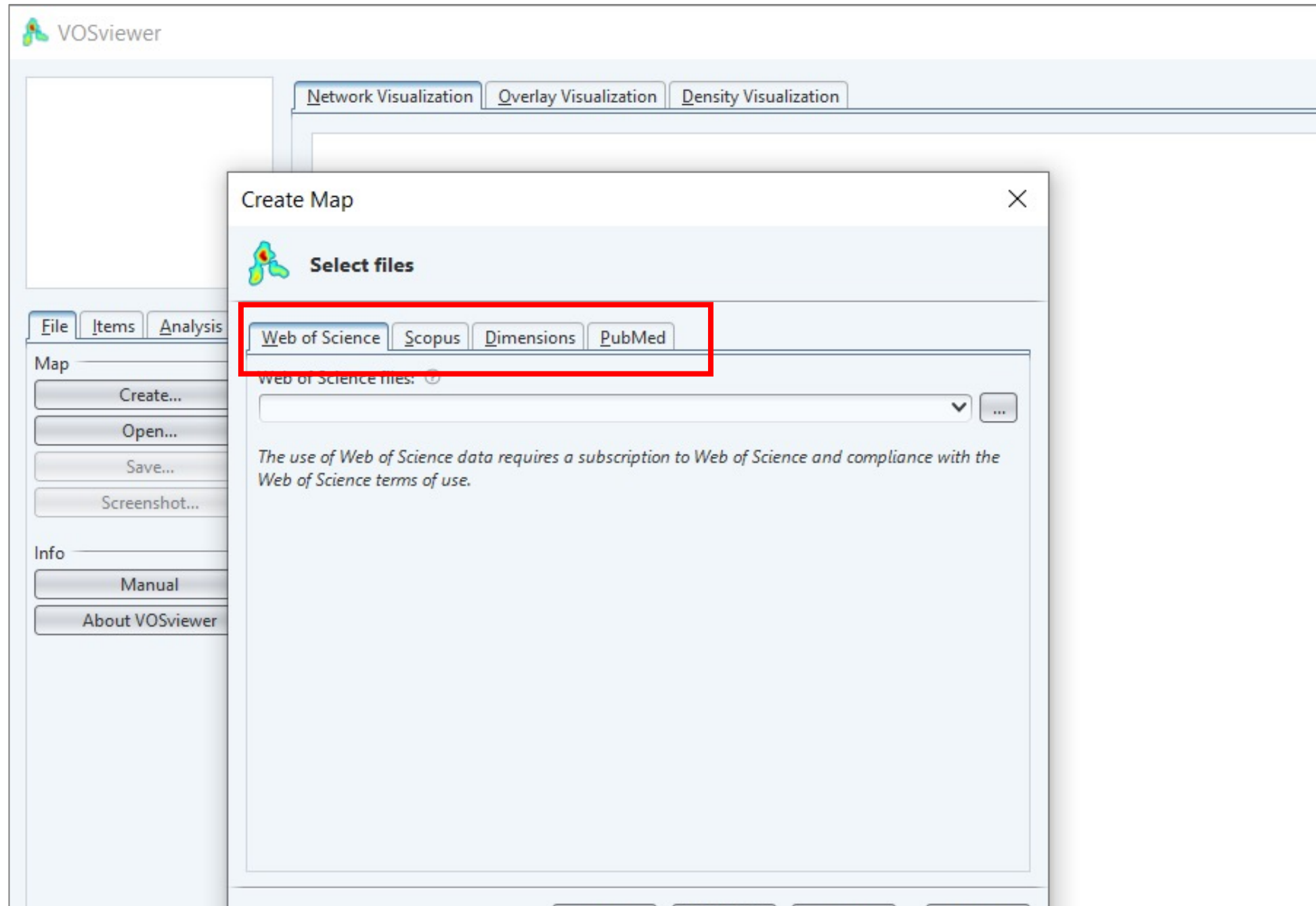






# VOSviewer

- Data from bibliographic database





# VOSviewer

## - Data from bibliographic database

The screenshot displays the Dimensions database interface. The top navigation bar includes the Dimensions logo, a search icon, and filters for '2022 Publication Year', 'Harvard University Research Organization', and '06 Biological Sciences Fields of Research'. The 'Save / Export' button is highlighted with a red box. The main content area shows a list of publications, with the first entry titled 'Real-time FTIR monitoring and modeling Bacillus amyloliquefaciens spore germination: Effect of temperature and sub-lethal treatment by nonthermal plasma' by Yaohua Huang, X. Philip Ye, Christopher J. Doona, and Florence E. Feeherry. The right sidebar shows 'ANALYTICAL VIEWS' with a list of research categories and their counts. A user profile dropdown menu is open, showing the user's name 'Dong Joon Lee', email 'djlee@library.tamu.edu', and affiliation 'Texas A&M University, Colleg...'. The 'Export center' option is highlighted with a red box.

**Dimensions** **2022** Publication Year **Harvard University** Research Organization **06 Biological Sciences** Fields of Research **Save / Export** **Workflow** **Support** Dong Joo...

**FILTERS** **FAVORITES**

GROUPS

PUBLICATION YEAR

2022 452

RESEARCHER

FUNDER

**PUBLICATIONS** 452 **DATASETS** 6 **GRANTS** 7 **PATENTS** 45 **CLINICAL TRIALS** 1 **POLICY DOCUMENTS** 0

☒ Show abstract Sort by: Relevance

Title, Author(s), Bibliographic reference - [About the metrics](#) [See attention in Altmetric Explorer](#)

[Real-time FTIR monitoring and modeling Bacillus amyloliquefaciens spore germination: Effect of temperature and sub-lethal treatment by nonthermal plasma](#)

Yaohua Huang, X. Philip Ye, Christopher J. Doona, Florence E. Feeherry

2022, Applied Food Research - Article

This study uses real-time FTIR spectroscopy to probe biochemical changes occurring in spores of Bacillus amyloliquefaciens...

**ANALYTICAL VIEWS**

RESEARCH CATEGORIES

06 Biological Sciences 452

0604 Genetics 199

0601 Biochemistry and Cell Biology 193

11 Medical and Health Sciences 93

03 Chemical Sciences 38

**Dong Joon Lee**  
djlee@library.tamu.edu  
Texas A&M University, Colleg...

My account

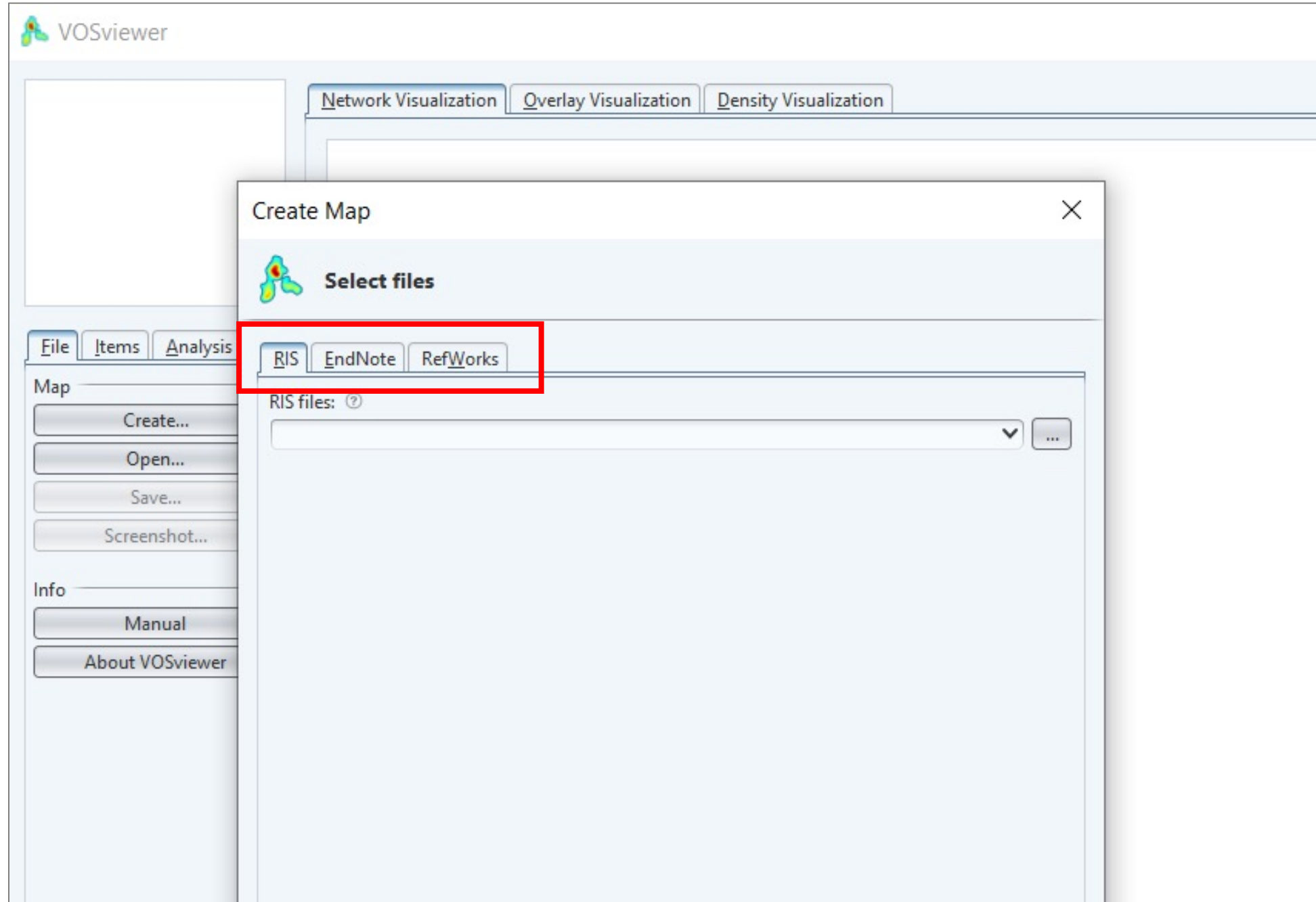
Connect with ORCID

**Export center**

Logout

# VOSviewer

- Data from reference manager files



# VOSviewer

- Data from reference manager files
- Sample RIS file is in Google Drives
- [https://en.wikipedia.org/wiki/RIS\\_\(file\\_format\)](https://en.wikipedia.org/wiki/RIS_(file_format))

```
TY  - JOUR
AU  - Shannon, Claude E.
PY  - 1948
DA  - July
TI  - A Mathematical Theory of Communication
T2  - Bell System Technical Journal
SP  - 379
EP  - 423
VL  - 27
ER  -
```

Any questions!