A New Horizon of Academic Libraries

-- Research Services and Data Analyses

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NATIONAL TAIWAN UNIVERSITY LIBRARY
SINCE 1928
國立臺灣大學圖書館

Agenda

- Technology and Applications
- Approaches
- Research Services
  - Discipline Services
  - Data Analysis
  - NTU Scholars
  - RDMLA
- Data Analysis Services
- Conclusions

Technology Impacts

- Digital technologies present new ways of preserving, representing, and analyzing various and diversified materials.
- Using novel computer-enabled methods, library services have captured the imagination of academics and the general public.

Applications of Smart Technology

- Emerging Technology
- Mature Technology

- Practical considerations
  - Costs
  - Budgets
  - Human resources
  - Reliability
  - Privacy
  - Collaborativeness

Initiation of Research Services

- Purposes
  - Promote open research/science
  - Support academic policy making
  - Assist researches of faculty members
  - Raise the visibility of the library
- Tasks
  - Construct research support infrastructure
  - Initiate research service framework
  - Implement service flatform
  - Develop best practices

NTU Library Organization Chart

Readers Services

Subject Services

Library Extension Services

University History Affairs

Medical Library

Law and Social Sciences Library

University Librarian

Associate University Librarian

Office of the University Librarians

Research Support

Information Technology Services

Administration

Collection Services

Special Collections

Acquisitions and Cataloging Division

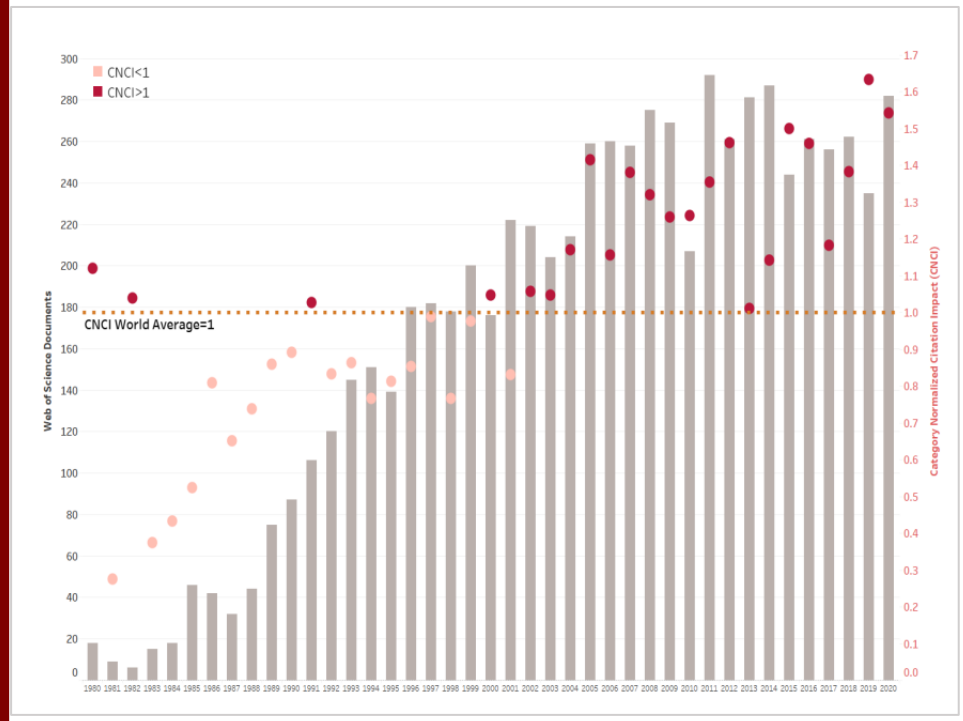
Icon made by Freepik from www.flaticon.com

Main Approach I – Activities & Collaborations

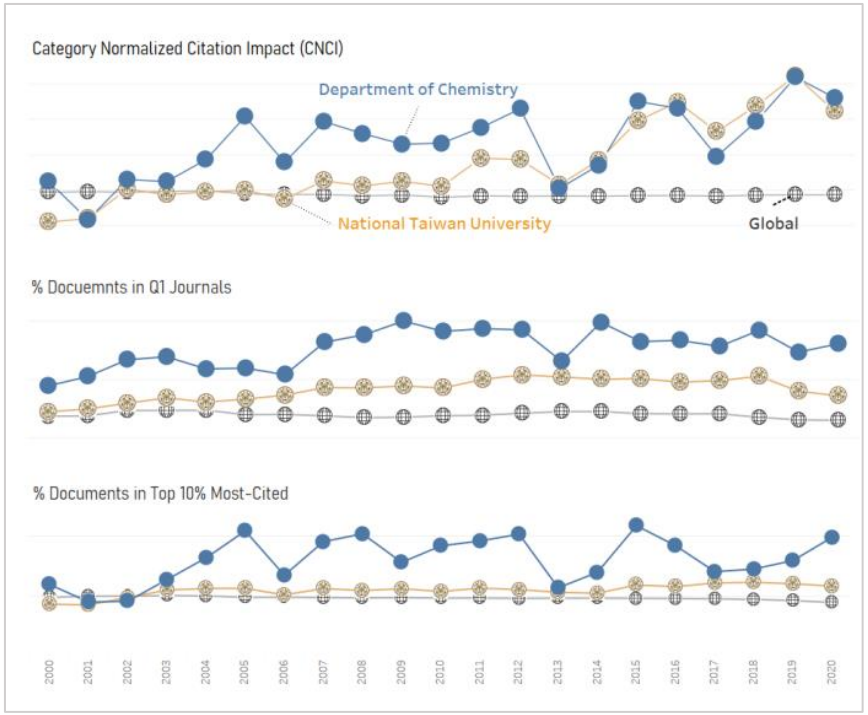
- Identify conceptual guidance
- Hold promotion activities via multiple channel
- Collect research outputs
- Develop training courses
- Cooperate with national/international organizations

Main Approach II - Bibliometrics

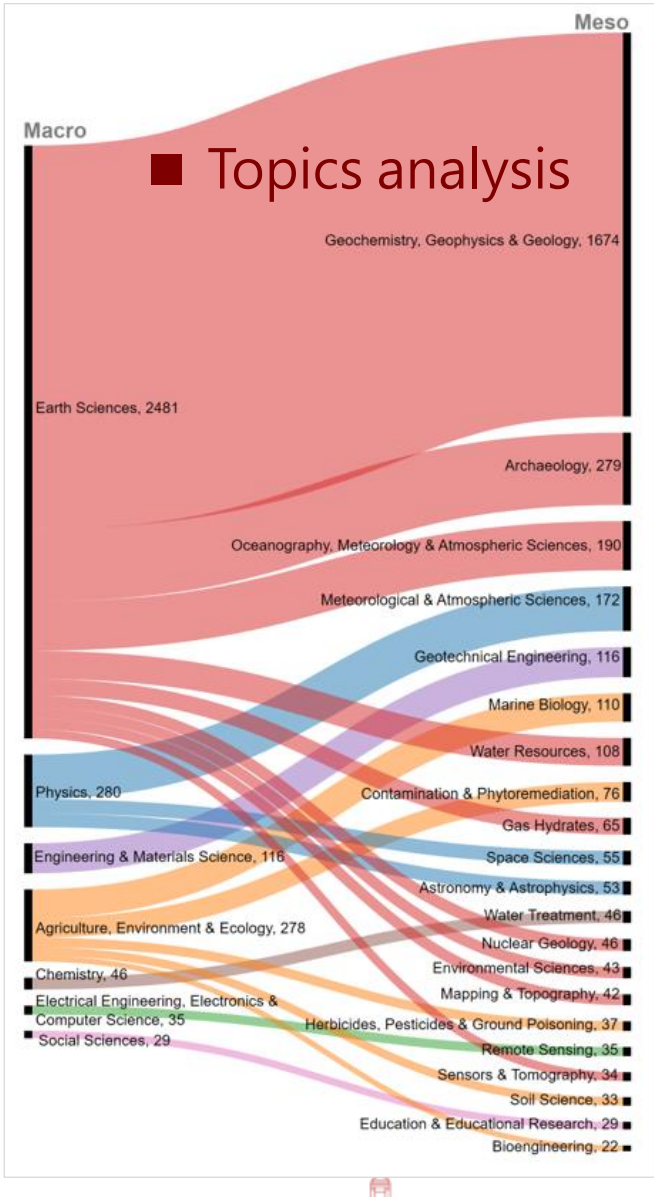
- Statistics for the bibliometric indicators



- Benchmarking targets



- Topics analysis

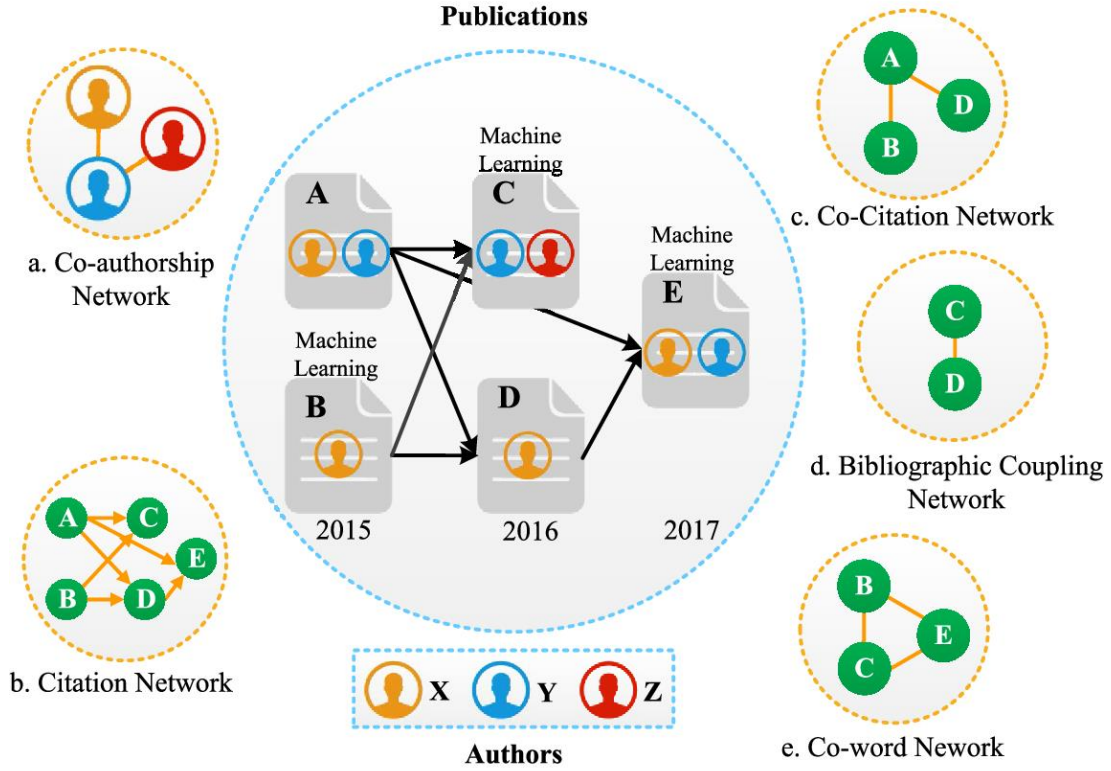


Main Approach III - Social Network Analysis

- Social network analysis (SNA) is a process of investigating social structures through the use of networks and graph theory.
- It characterizes networked structures in terms of *nodes* (individual actors, people, or things within the network) and the *ties*, *edges*, or *links* (relationships or interactions) that connect them.

Social network analysis - Wikipedia

■ Example for SNA of bibliographies

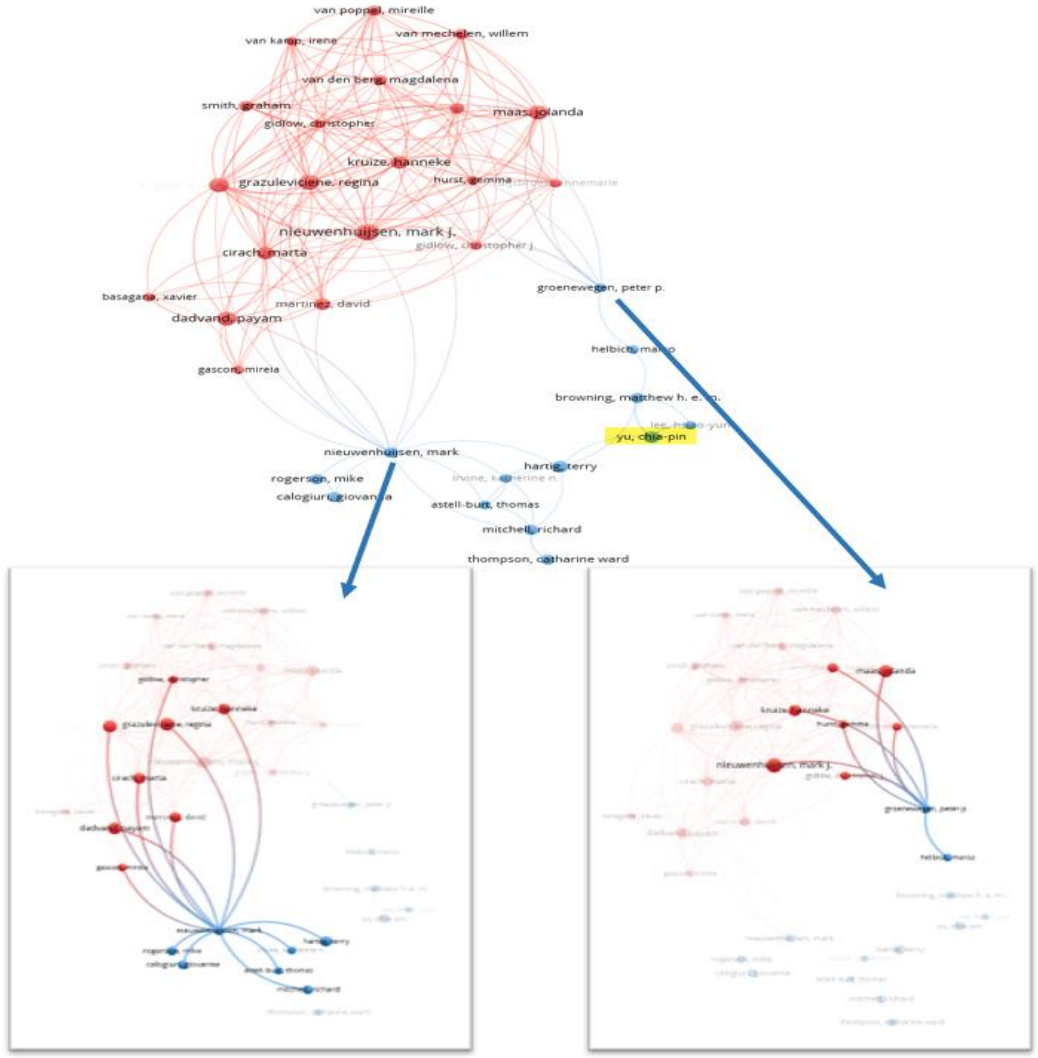


Kong, X., Shi, Y., Yu, S., Liu, J., & Xia, F. (2019). Academic social networks: Modeling, analysis, mining and applications. *J. Netw. Comput. Appl., 132*, 86-103. https://doi.org/10.1016/j.jnca.2019.01.029

Main Approach III - Social Network Analysis

- Co-word network
  - Keywords occurrence
- Bibliographic coupling network
  - Shared earlier references
- Co-citation network
  - Co-cited by later publications
- Co-authorship network
  - Authors
  - Institutions
  - Countries

- Example for co-authorship of authors



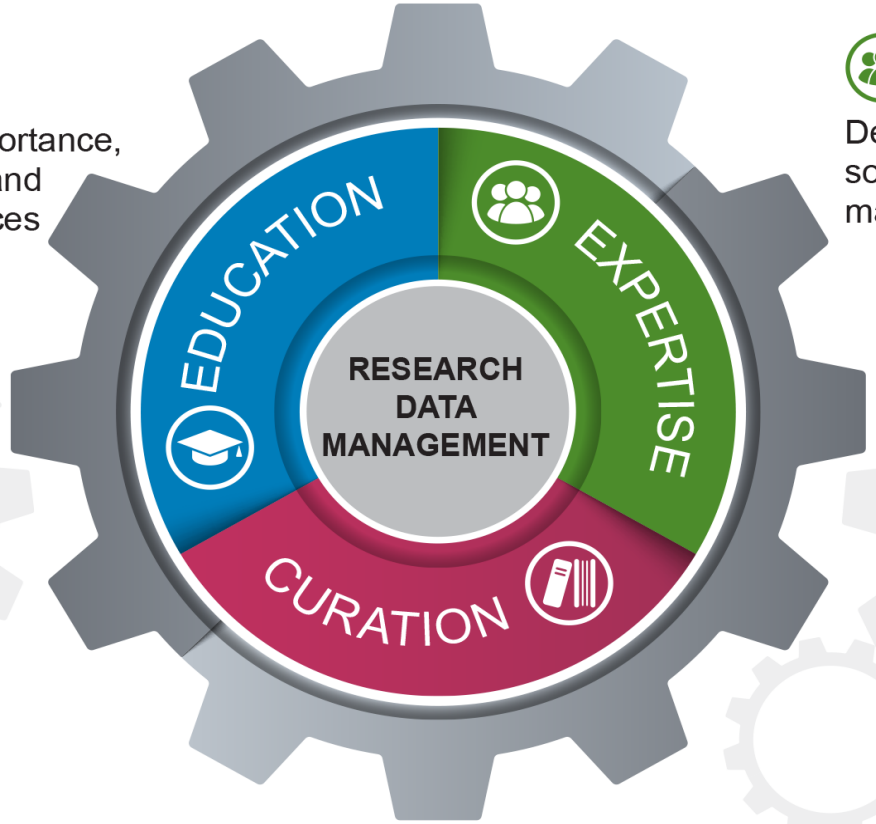
Main Approach IV – Service Platforms

- Regulate the standard coding framework
- Use publicly available tools or services
- Code functional modules to smooth different services
- Develop seamless procedure to pipeline various tools
- Construct friendly information platforms

Framework for Research Services

EDUCATION

Raise awareness of RDM's importance, encourage RDM skill-building, and disclose RDM tools and resources



EXPERTISE

Decision support for, and customized solutions to, specific research data management problems

CURATION

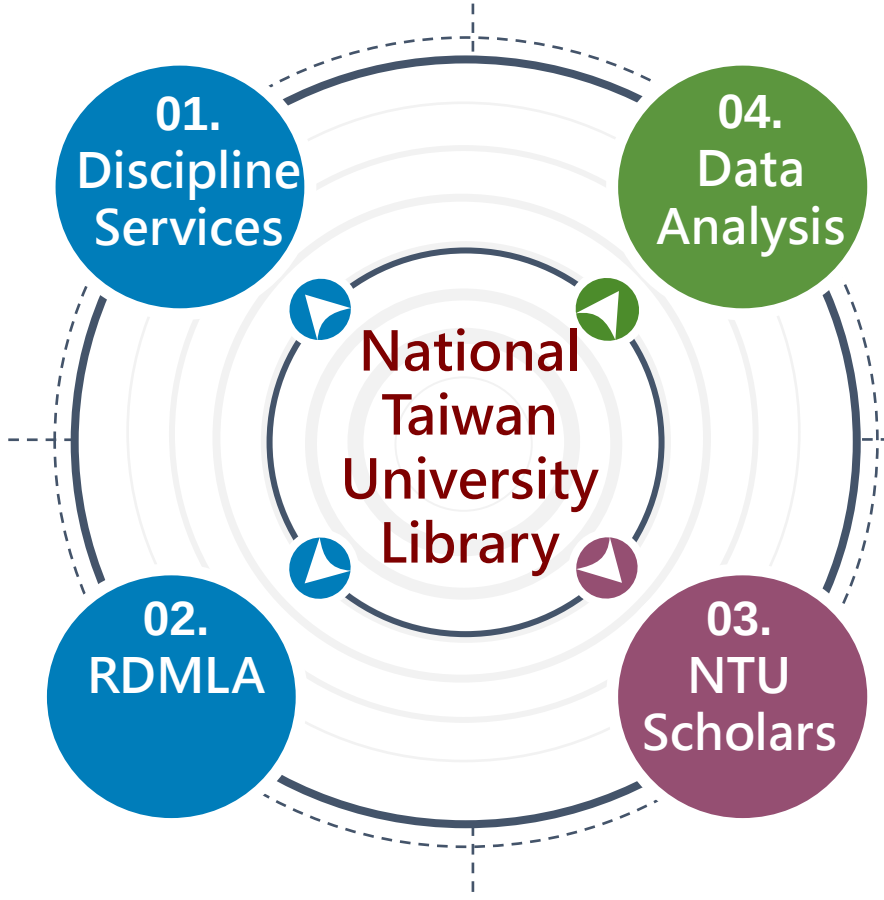
Technical infrastructure and related services that support data management throughout the research cycle

Bryant, R., Lavoie, B. and Malpas, C. (2017), " A Tour of the Research Data Management (RDM) Service Space", *The Realities of Research Data Management, Part 1*. Dublin, OH: OCLC Research. https://doi.org/10.25333/C3PG8J.

Multiple Research Services

Collaborate researchers

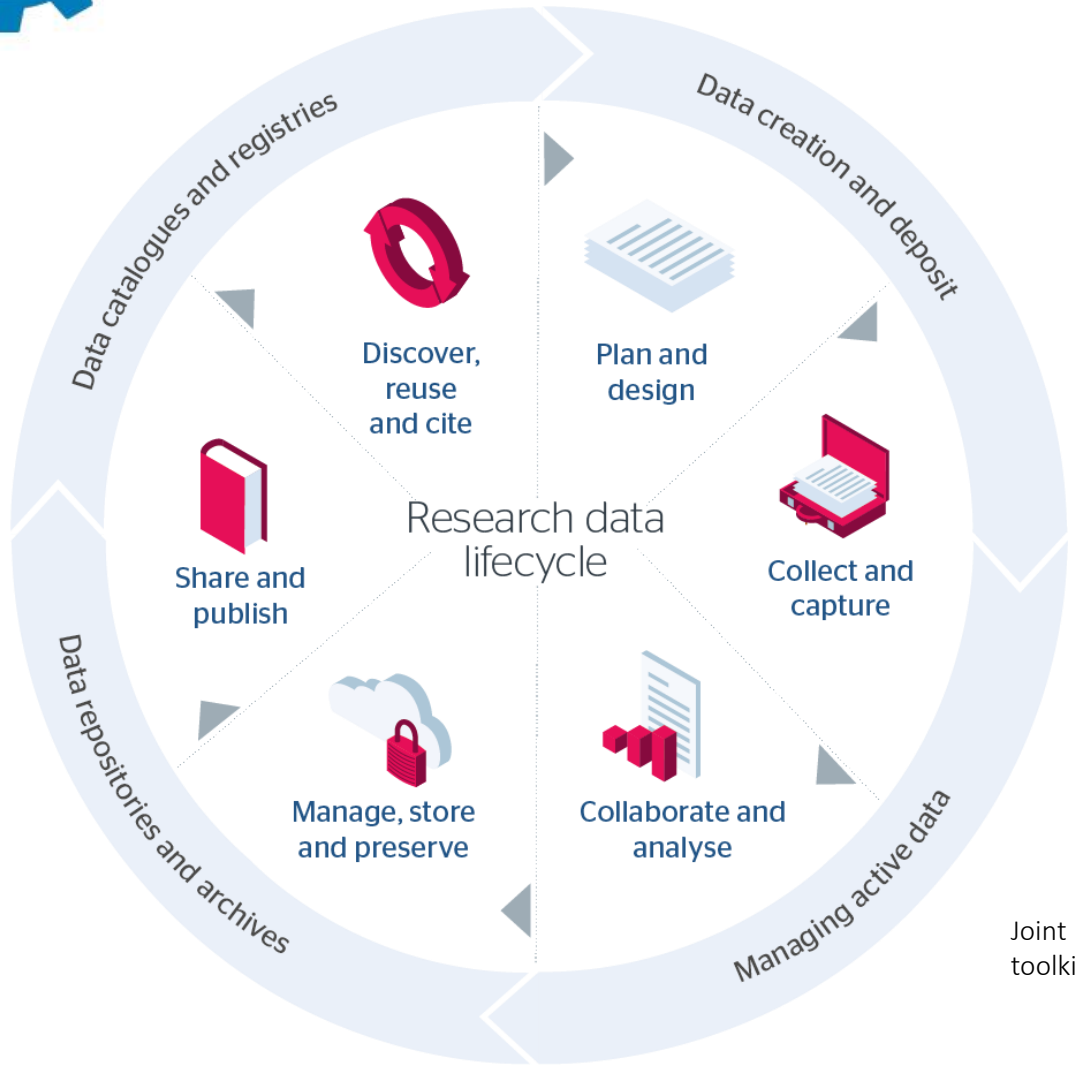
Scholarly Information and data reuse



Support decision-making

Enhance visibility and influence

Discipline Services



- Advocate and promote various topics in the research data life cycle
- Use multiple channels to deepen subject services

Joint Information Systems Committee, JISC (2021), "Research data management toolkit". https://www.jisc.ac.uk/f

Discipline Services

Reference Services

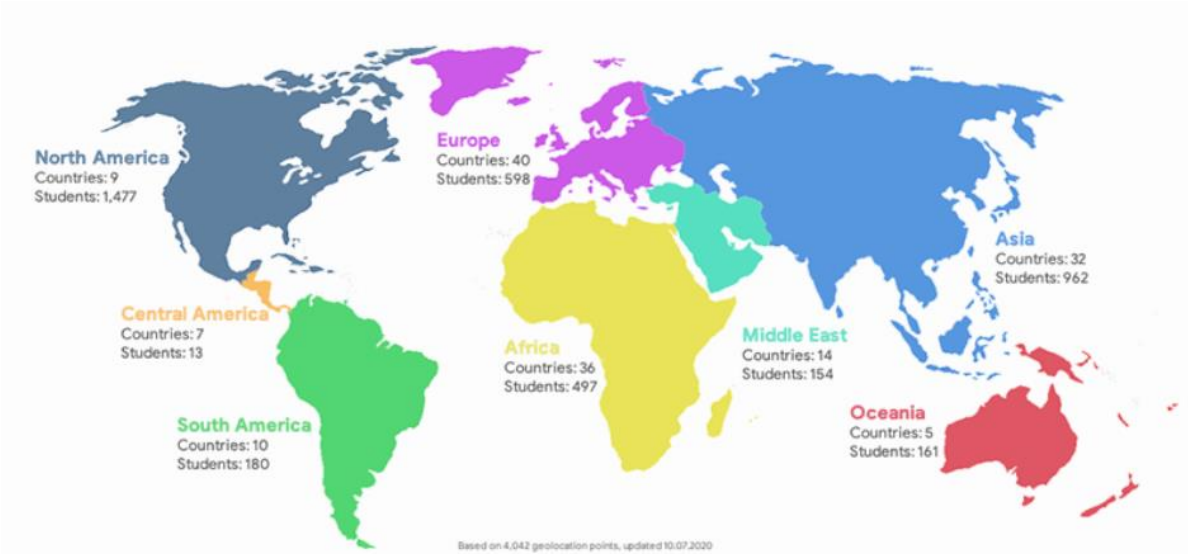
Users Services

Institutes Services

RDMLA

RDMLA
RESEARCH DATA MANAGEMENT LIBRARIAN ACADEMY

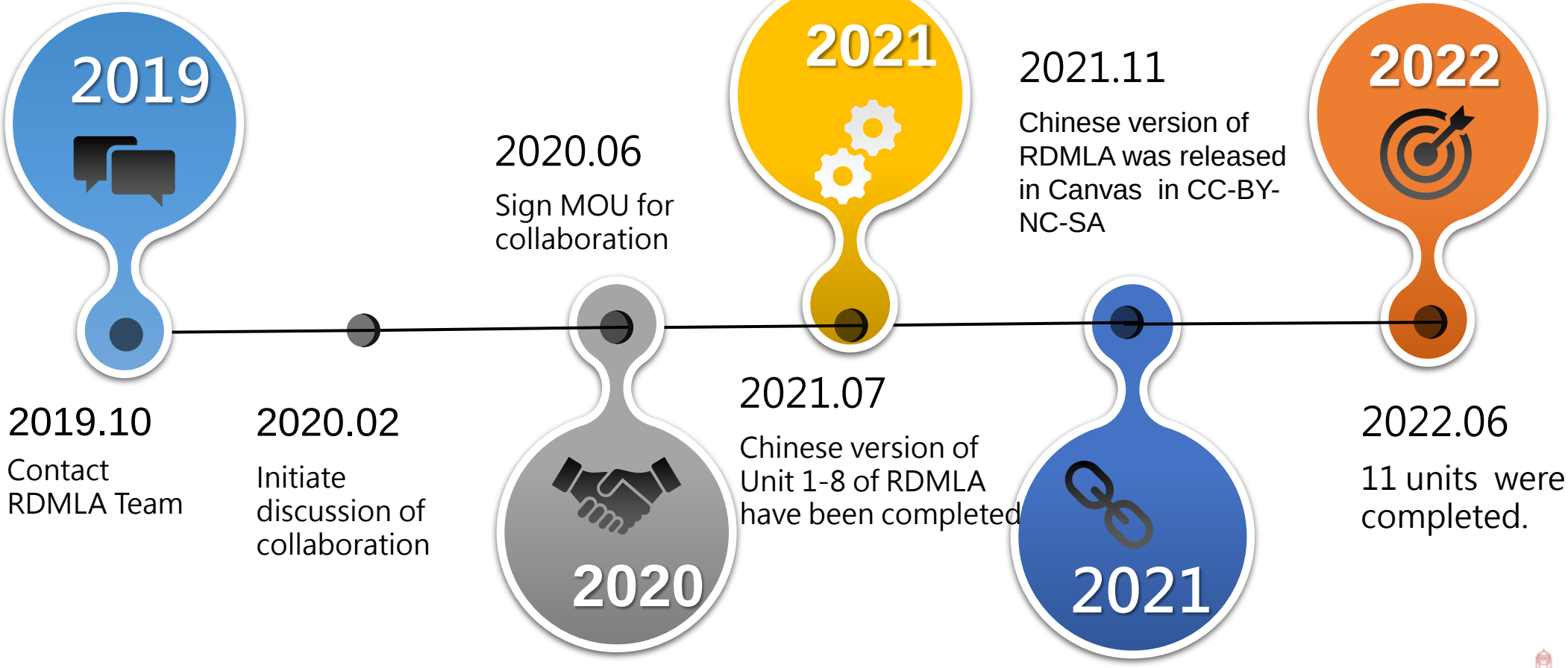
- Research Data Management Librarian Academy (RDMLA) is an online course initiate by Harvard Medical School, Harvard Library, Simmons University for research data training and education.



Registered Students: 4,271 | Successful CE: 25 (updated: 10.22.2020)

- Partner organizations include Harvard Medical School, Harvard Library, Simmons University, Boston University, Brown University, MCPHS, Northeastern University, Tufts University, DataONE, **National Taiwan University Library**, National Institutes of Health, and Indiana University-Purdue University Indianapolis.

RDMLA Project
- an International Collaboration



RDMLA Project - an International Collaboration

- 11 course units are released in Canvas by CC-BY-NC-SA
- Chinese version https://t.ly/1wNx

課程網址：https://t.ly/1wNx

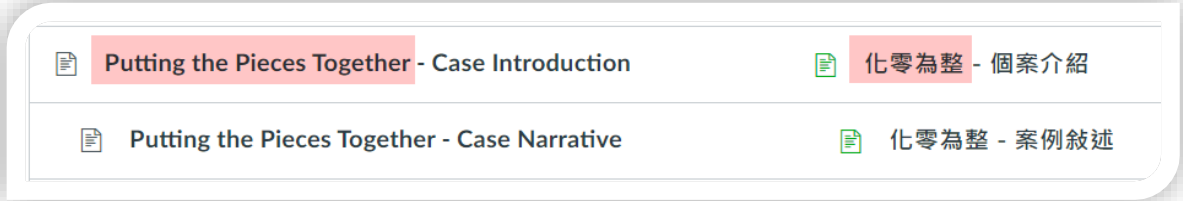
研究資料管理圖書館員課程

[RDMLA中文版]

RDMLA Project - an International Collaboration

- Not only consider users understanding traditional Chinese but also those who understand simplified Chinese
  - Proper nouns are presented in both Chinese and English.
  - Juxtapose simplified and traditional Chinese terminology for reference.
  - Take literal translation as the principle
  - Use short Chinese words when possible
  - Add supplementary explanation when possible

English	繁體中文	简体中文
R package	R 套件	R 语言包/R 包
subsetting	子集選取	子集构建
slice the data	分割資料	数据切片
R session	R 工作階段	R 会话
highlight chart	醒目提示表	突出显示表



RDMLA Project
- an International Collaboration

A

B

C

Teachers A+B+C

- Course materials
- Extended designated reference materials

Librarians A+B+C

- Independent Learning Resources
- RDM Service Planning
- Digital learning/utilization guidance courses, resource guidance materials

Researchers A+C

- Independent Learning Resources
- Training materials for Lab team

RDMLA — Value-added Resources

- Construct "Research Data Management Learning Guide" to increase the value of RDMLA.
- Integrate other learning platforms, important collections, related tool and resources, etc.
- Provide other academic libraries with educational and training courses, and resources for librarians for quick guidance

NTU Scholars

DSpace-CRIS
Flexible Framework

Diversified resources
Multiple metrics

Standard API
Sharable Resources

Author's perspective

臺大學術庫
Academic Hub

國立臺灣大學圖書館
National Taiwan University Library
臺大學術典藏
NTU SCHOLARS

Publication's perspective

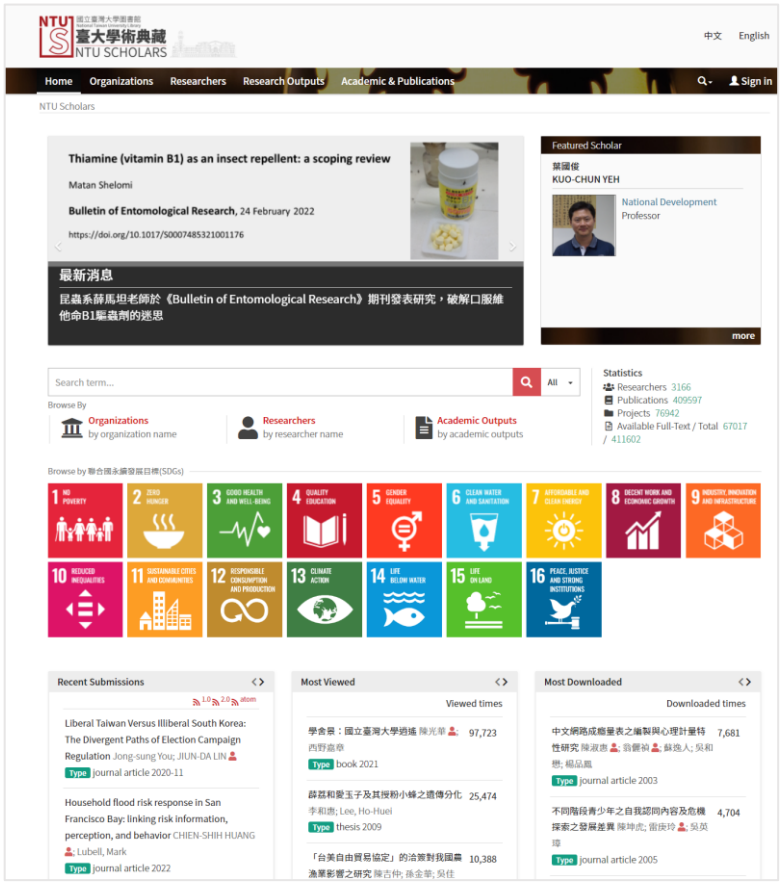
臺大機構典藏
NTU Repository

NTU Scholars

Statistics

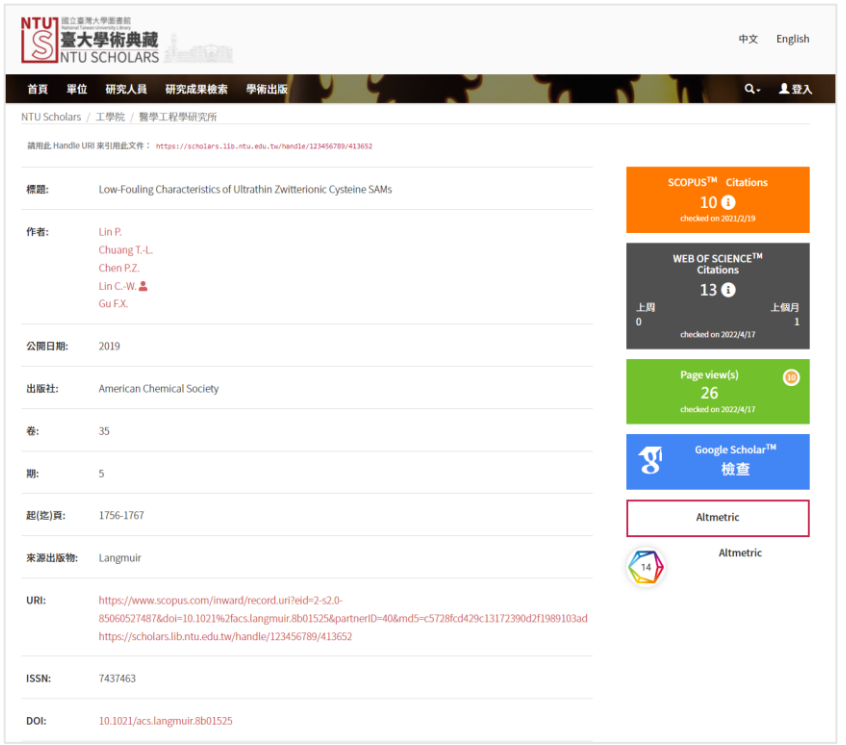
- Researchers 3167
- Publications 409642
- Projects 76946
- Available Full-Text / Total 67017 / 411647

Search articles by SDG



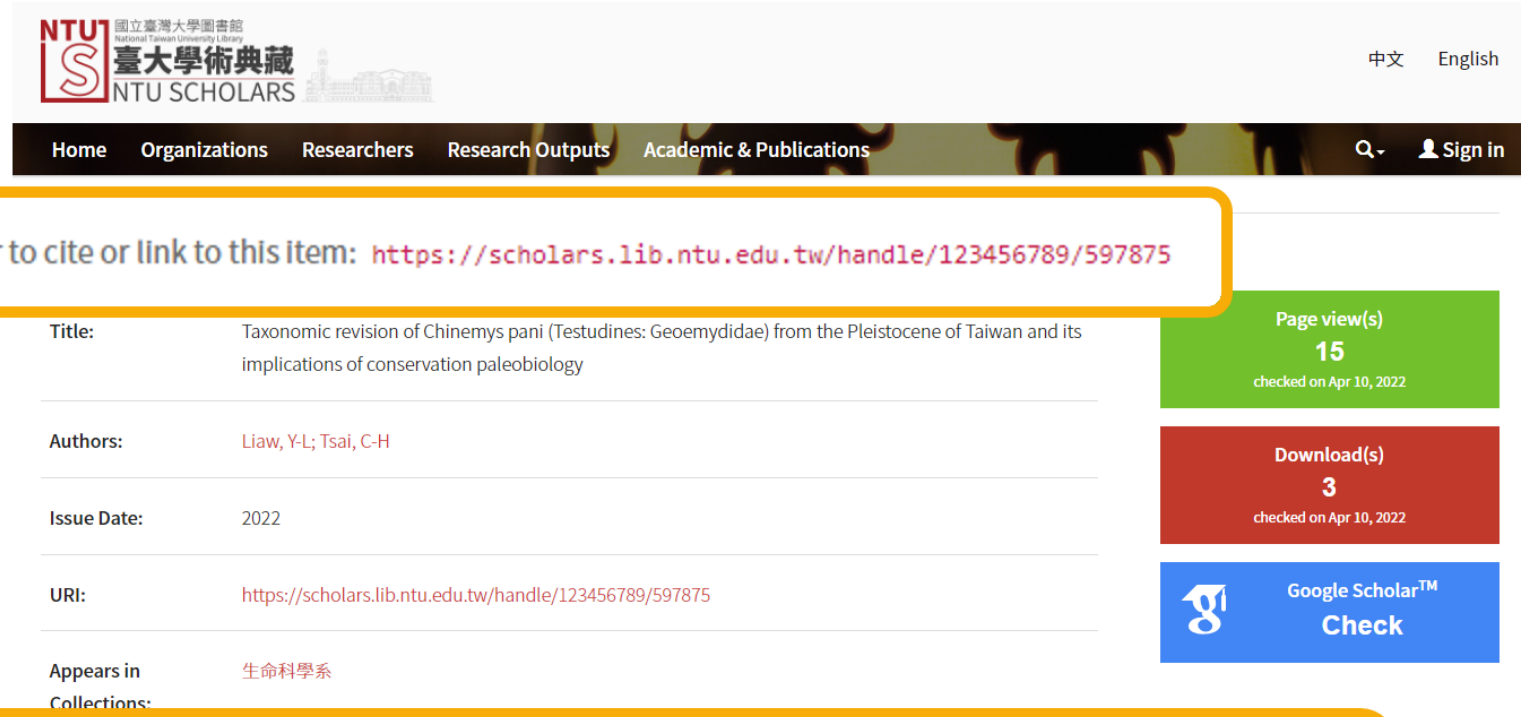
Browse author pages

Examine article pages



NTU Scholars

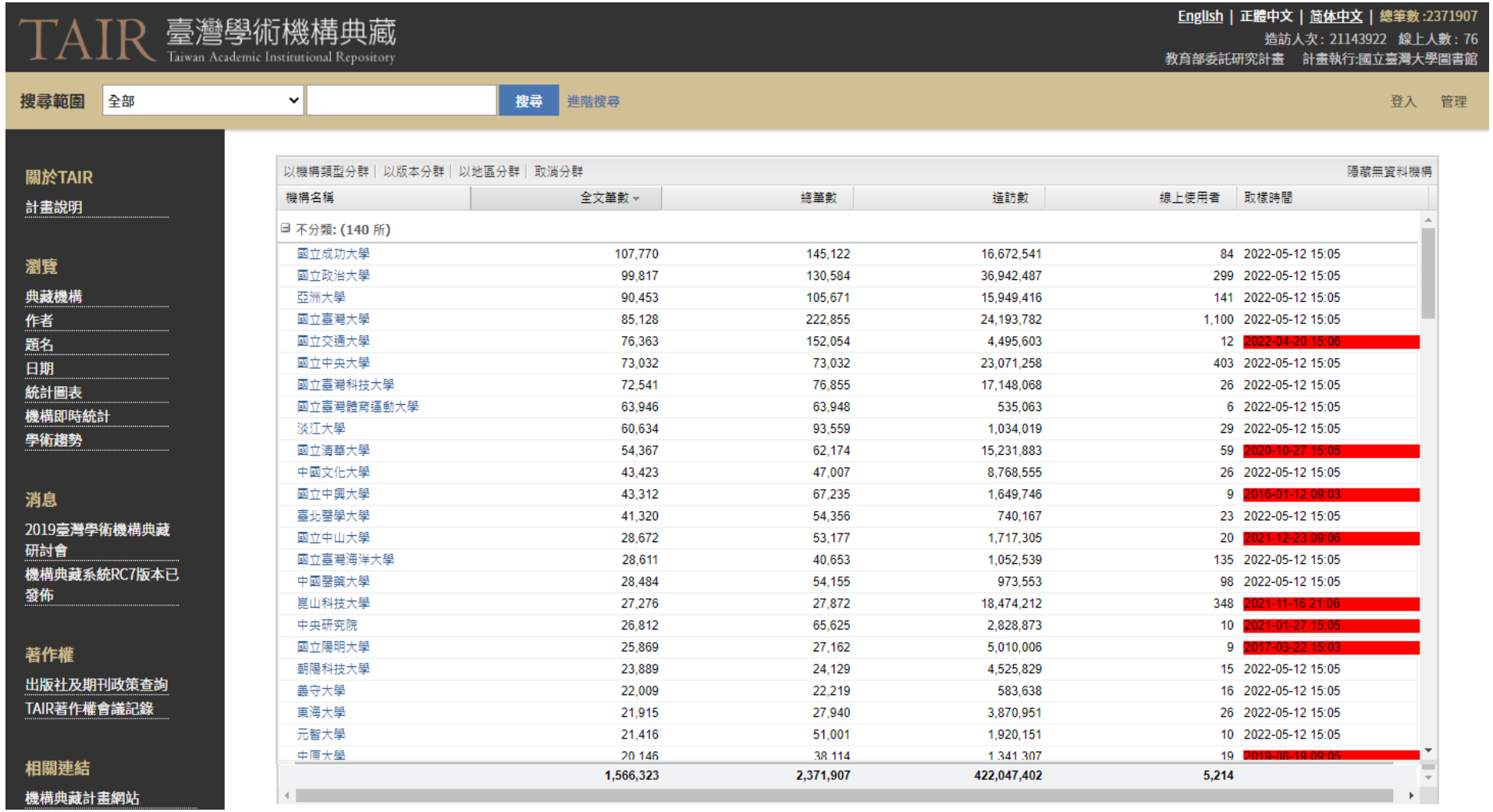
handle



- Deposit diversified data format, e.g., PDF, Excel, audio, video, etc.
- Examine 3D dynamic file

Taiwan Academic Intuitional Repository

Usage Statistics of TAIR



TAIR 臺灣學術機構典藏
Taiwan Academic Institutional Repository

English | 正體中文 | 简体中文 | 總筆數 :2371907
造訪人次: 21143922 線上人數: 76
教育部委託研究計畫 計畫執行:國立臺灣大學圖書館

搜尋範圍 全部 搜尋 進階搜尋 登入 管理

關於TAIR
計畫說明

瀏覽
典藏機構
作者
題名
日期
統計圖表
機構即時統計
學術趨勢

消息
2019臺灣學術機構典藏研討會
機構典藏系統RC7版本已發佈

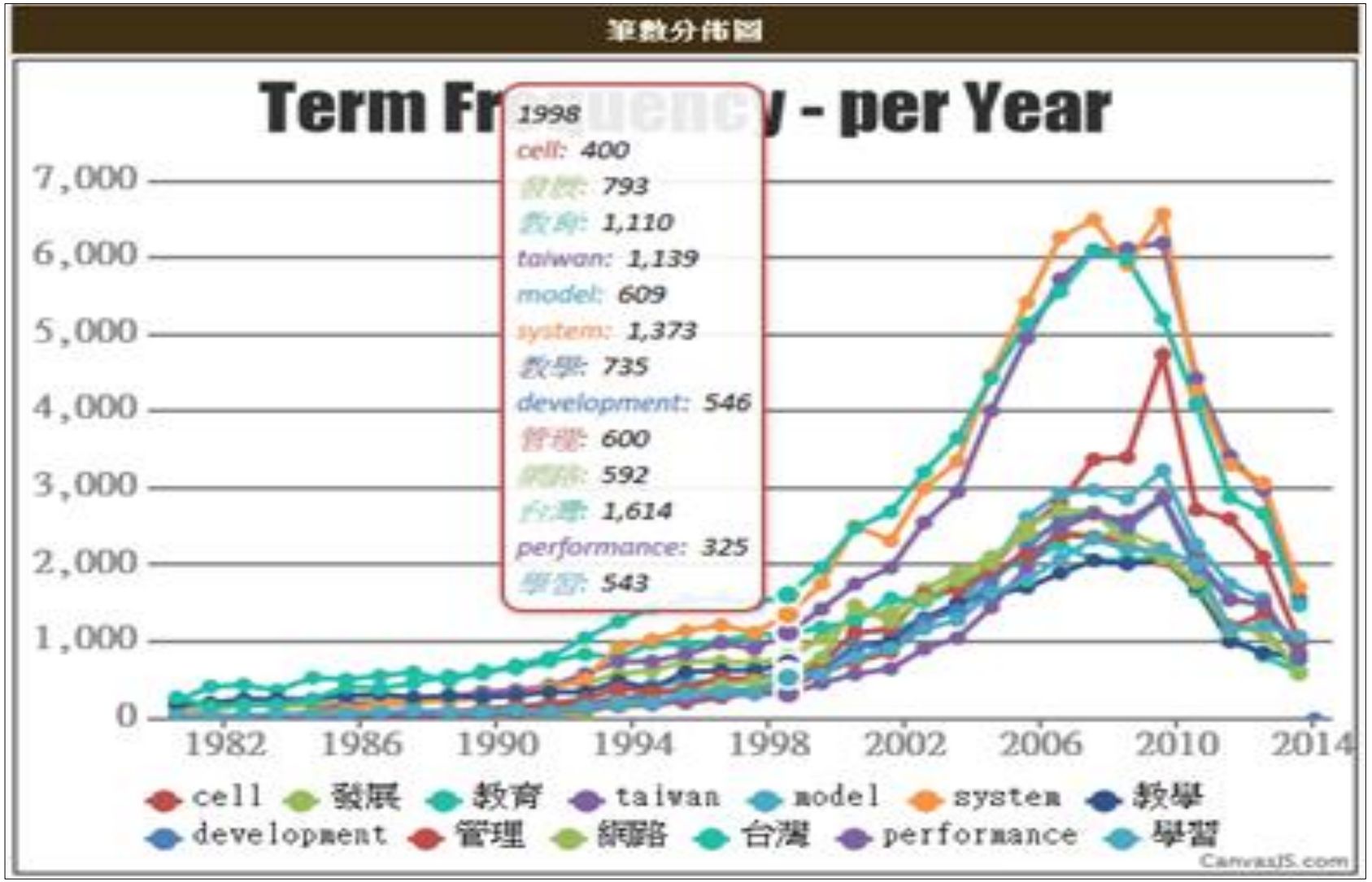
著作權
出版社及期刊政策查詢
TAIR著作權會議記錄

相關連結
機構典藏計畫網站

以機構類型分群 | 以版本分群 | 以地區分群 | 取消分群 隱藏無資料機構

機構名稱	全文筆數	總筆數	造訪數	線上使用者	取樣時間
不分類: (140 所)					
國立成功大學	107,770	145,122	16,672,541	84	2022-05-12 15:05
國立政治大學	99,817	130,584	36,942,487	299	2022-05-12 15:05
亞洲大學	90,453	105,671	15,949,416	141	2022-05-12 15:05
國立臺灣大學	85,128	222,855	24,193,782	1,100	2022-05-12 15:05
國立交通大學	76,363	152,054	4,495,603	12	2022-04-20 15:06
國立中央大學	73,032	73,032	23,071,258	403	2022-05-12 15:05
國立臺灣科技大學	72,541	76,855	17,148,068	26	2022-05-12 15:05
國立臺灣體育運動大學	63,946	63,948	535,063	6	2022-05-12 15:05
淡江大學	60,634	93,559	1,034,019	29	2022-05-12 15:05
國立清華大學	54,367	62,174	15,231,883	59	2020-10-27 15:05
中國文化大學	43,423	47,007	8,768,555	26	2022-05-12 15:05
國立中興大學	43,312	67,235	1,649,746	9	2016-01-12 09:03
臺北醫學大學	41,320	54,356	740,167	23	2022-05-12 15:05
國立中山大學	28,672	53,177	1,717,305	20	2021-12-23 09:06
國立臺灣海洋大學	28,611	40,653	1,052,539	135	2022-05-12 15:05
中國醫藥大學	28,484	54,155	973,553	98	2022-05-12 15:05
崑山科技大學	27,276	27,872	18,474,212	348	2021-11-16 21:06
中央研究院	26,812	65,625	2,828,873	10	2021-01-27 15:05
國立陽明大學	25,869	27,162	5,010,006	9	2017-03-22 15:03
朝陽科技大學	23,889	24,129	4,525,829	15	2022-05-12 15:05
義守大學	22,009	22,219	583,638	16	2022-05-12 15:05
東海大學	21,915	27,940	3,870,951	26	2022-05-12 15:05
元智大學	21,416	51,001	1,920,151	10	2022-05-12 15:05
中原大學	20,146	38,114	1,341,307	19	2019-08-19 09:05
	1,566,323	2,371,907	422,047,402	5,214	

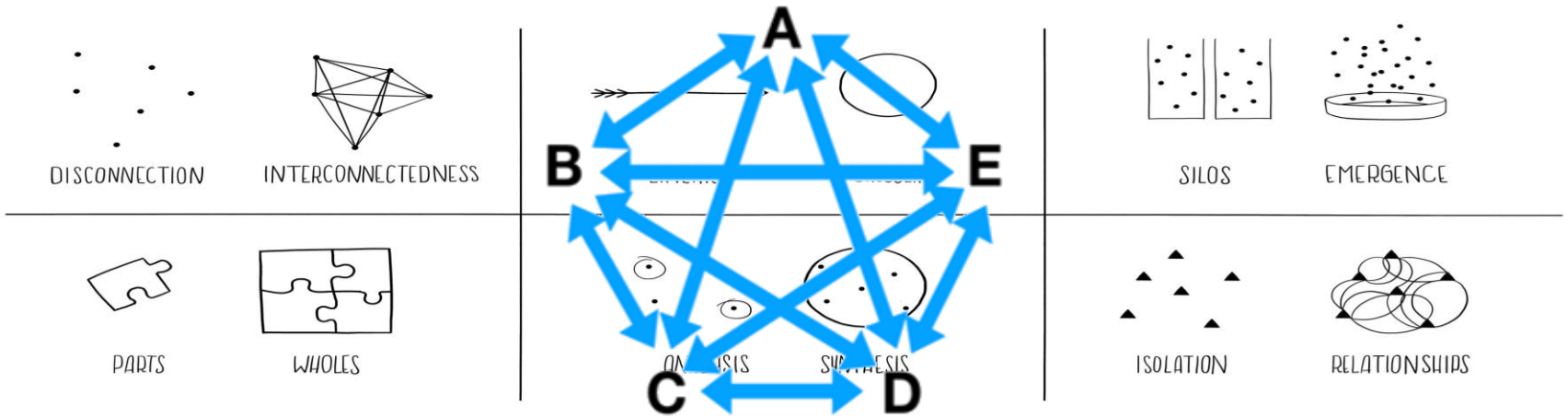
Research Applications based on TAIR



Data Analysis Services

The services assist teachers to quickly explore the overall picture of the research topics and the overview of multiple aspects

BROAD OVERVIEW DISCOVERY



Data Analysis Services

1. Explore Research Development

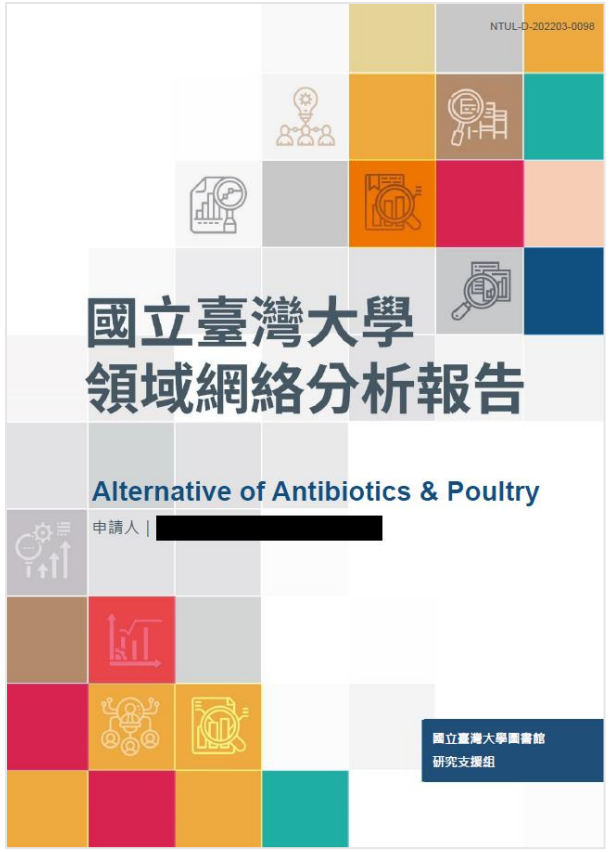
- Collect core literature
- Investigate overview of research area
- Explore future research trend
- Find potential collaborators
- Provide supporting material for funding application

2. Deepen Library Services

- Demonstrate research outputs
- Help enhance academic performance
- Participate in research activities

Data Analysis Services - Types

- Domain Analysis - for researchers



- Competitiveness Analysis - for Institutes

- Research Analysis - for Disciplines

Data Analysis Services
– Domain Analysis for researchers

- Carry out domain analysis from multiple perspectives
  - co-occurrence of keywords
  - co-authorship
  - bibliographic coupling
  - knowledge source
  - citation path analysis, etc.
- The analysis will be supplemented by various sources of academic index, e.g., WoS, Scopus

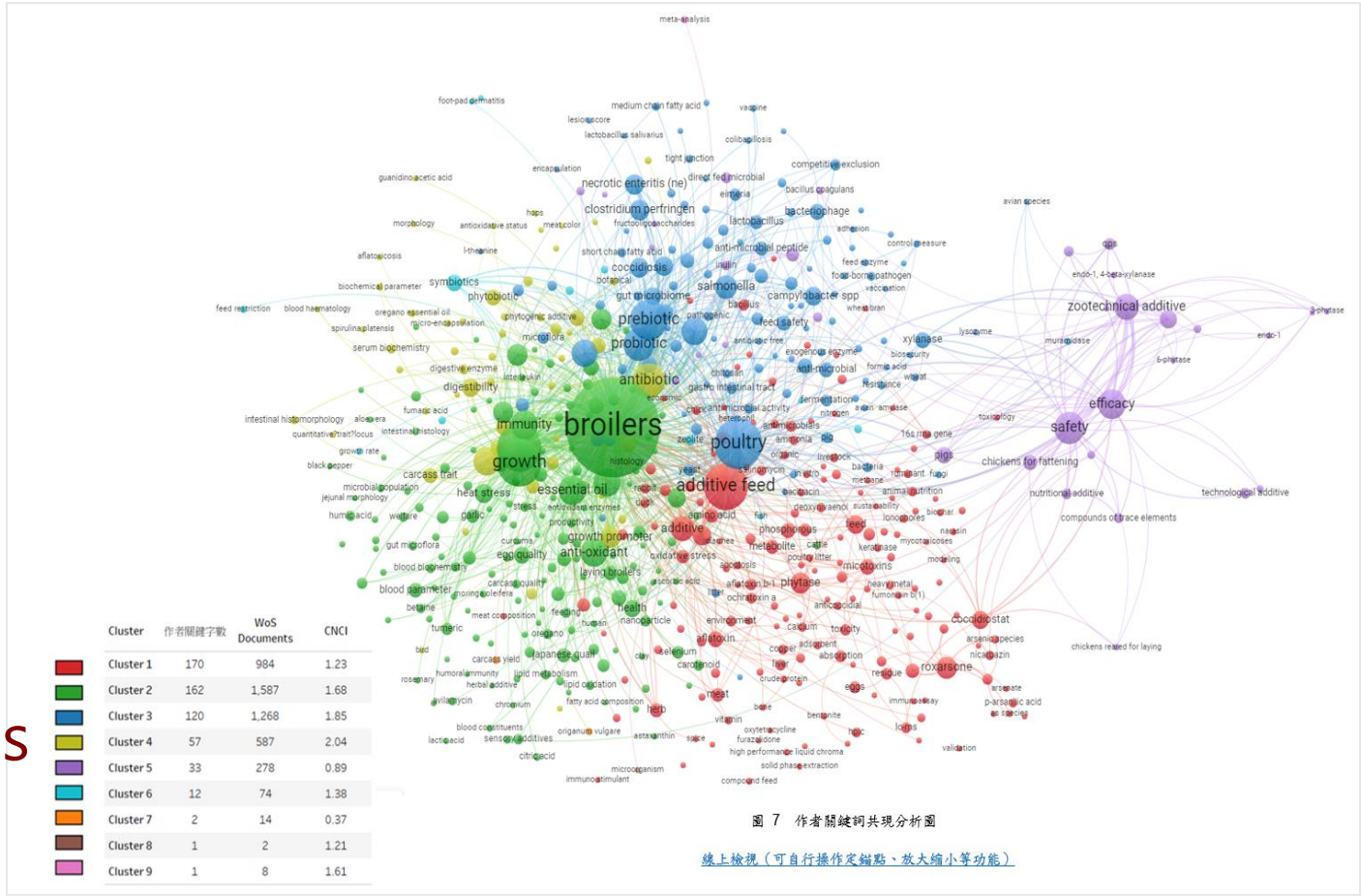
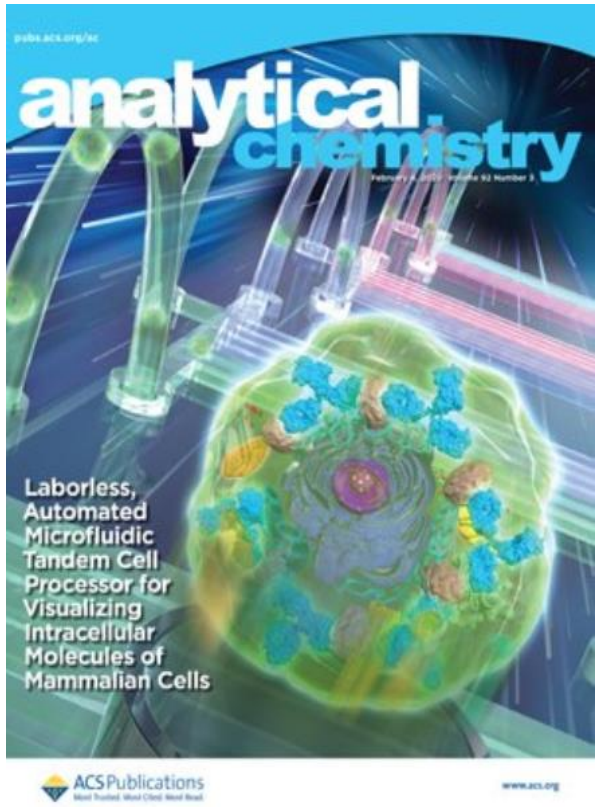
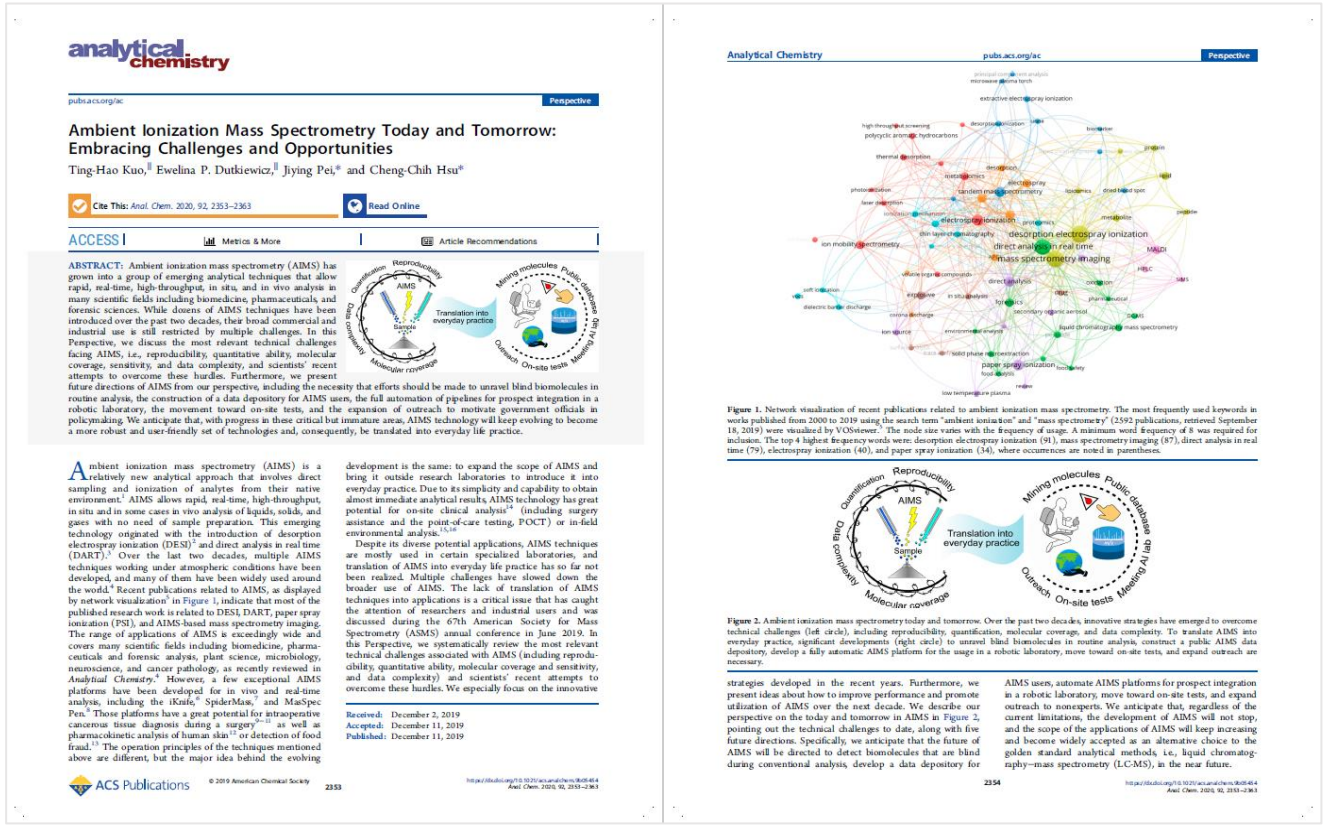


圖 7 作者關鍵詞共現分析圖

線上檢視（可自行操作定錨點、放大縮小等功能）

Data Analysis Services – Examples

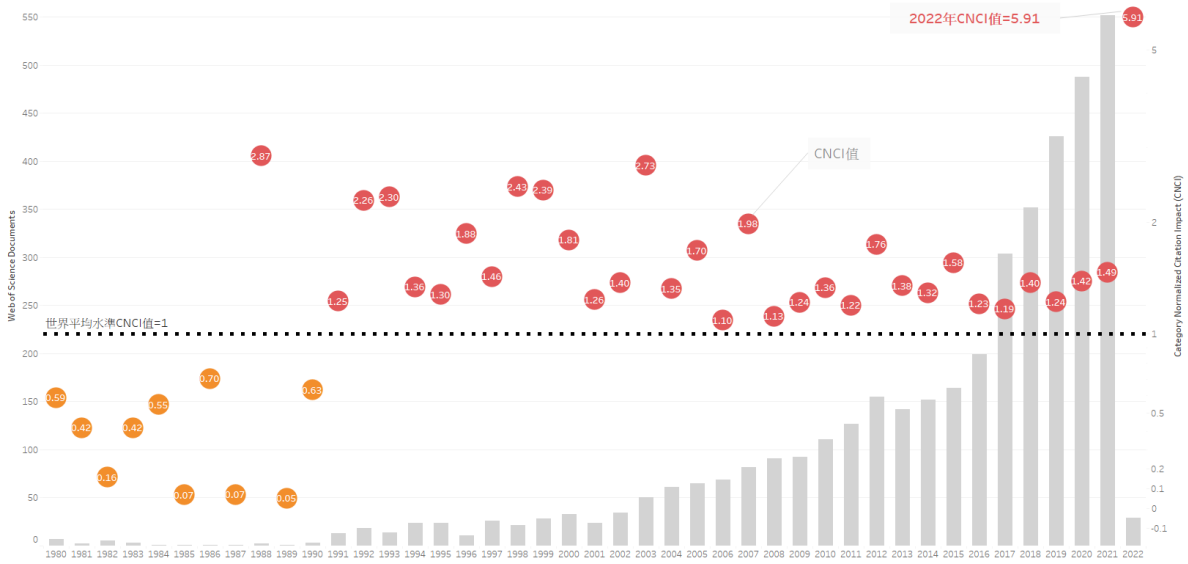




Kuo, T.-H., Dutkiewicz, E. P., Pei, J., & Hsu, C.-C. (2020). Ambient Ionization Mass Spectrometry Today and Tomorrow: Embracing Challenges and Opportunities. Analytical Chemistry, 92(3), 2353–2363. https://doi.org/10.1021/acs.analchem.9b05454

Data Analysis Services
– Competitiveness Analysis for Institutes

- Multiple indicators and value-added information
- Information visualization



（三）收錄期刊

研究主題文獻共發表在 718 種期刊，限縮 2017-2021 年近 5 年完整資料年度所發表的 444 種期刊統計分析。收錄此研究主題論文超過 20 篇以上者共計有 17 種，提供期刊收錄研究主題論文數量、Journal Impact Factor 及其 JIF Quartile、出版頻率等資訊如圖 4。

- Journal Impact Factor 及文章的引文影響力數值並不一定成正比，可對比參照 WoS Categories 資訊進行擇選。
- 除提供論文數量總數外，期刊逐年收錄論文數趨勢情形亦可列入決策參考。
- Journal Impact Factor 係以 JCR 2020 Data 為依據來源。其中「Veterinary World」為 WoS 核心合輯之 Emerging Sources Citation Index (ESCI)所收錄，因此無 Journal Impact Factor、JIF Quartile 等資訊。
- 由於出版情形變化快速，請特別注意每年 6 月 JCR 所發布的 Suppression Lists，對於期刊自我引用或期刊間互引出現異常而提出的預警性期刊清單，避免該期刊經調查後未來被 JCR 除名所帶來的學術風險。

Name	JIF Quartile	Journal Impact Factor	publication frequency	WoS Categories
POULTRY SCIENCE	Q1	3.35	12 issues/year	AGRICULTURE, DAIRY & ANIMAL SCIENCE
ANIMALS	Q1	2.75	4 issues/year	AGRICULTURE, DAIRY & ANIMAL SCIENCE,VETERINARY SCIENCES
EFSA JOURNAL	Q2	3.34	12 issues/year	FOOD SCIENCE & TECHNOLOGY
JOURNAL OF APPLIED POULTRY RESEARCH	Q3	1.18	4 issues/year	AGRICULTURE, DAIRY & ANIMAL SCIENCE,VETERINARY SCIENCES
WORLDS POULTRY SCIENCE JOURNAL	Q1	2.92	4 issues/year	AGRICULTURE, DAIRY & ANIMAL SCIENCE
JOURNAL OF ANIMAL PHYSIOLOGY AND ANIMAL NUTRITION	Q2	2.13	6 issues/year	AGRICULTURE, DAIRY & ANIMAL SCIENCE,VETERINARY SCIENCES
BRAZILIAN JOURNAL OF POULTRY SCIENCE	Q4	0.83	4 issues/year	AGRICULTURE, DAIRY & ANIMAL SCIENCE

Data Analysis Services
- Competitiveness Analysis for Institutes

國立臺灣大學

學術成果概覽—
國立臺灣大學化學系

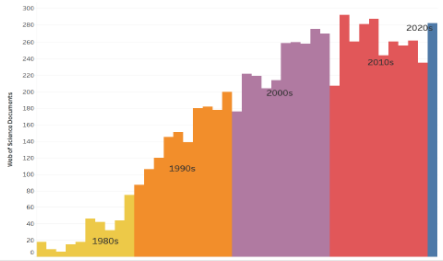
At a Glance – Academic Metrics Profile of
Department of Chemistry, National Taiwan University

臺大圖書館研究支援組
☎ 02-3366-2336
✉ ntulibcn@ntu.edu.tw

NTUL-E-202201-0003

Web of Science Documents

Web of Science Documents	% Open Access Documents	% First Author
7,028	41%	59%



DATASET

Source: Web of Science Core Collection
InCites Benchmarking and Analytics

Publication Year: 1980-2020 Retrieved Date: 2022.01.26

Search Strategy: AD*=(Natl Taiwan Univ SAME (Chem NOT Chem Engn NOT Agr Chem))

* Advanced search field tag AD=Address, searches for institution and/or place names in the Address field within a record.

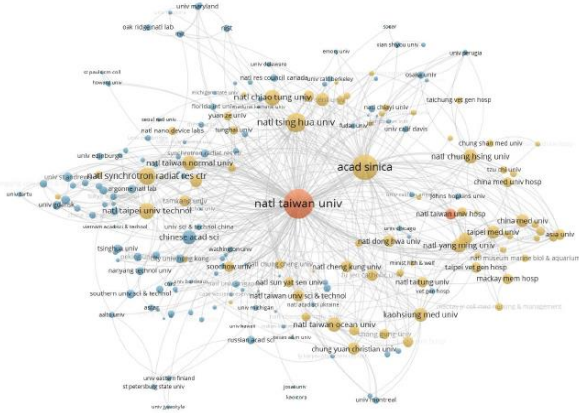
Publication Sources

Source Titles	%Documents in Q1 Journals	%Documents in Q2 Journals
742	70%	20%

Top 12 Journals of Web of Science Documents in 1980-2020

03

Collaborations



1. Co-authorship analysis of organizations for Web of Science documents in 1980-2020 by VOSviewer.
2. The VOSviewer recorded 1,188 organizations, and the minimum documents of co-authorship was set to 5. Scale by the weights of links.
3. 208 organizations met the threshold.

Data Analysis Services
– Benchmarking Institutes

- Benchmarking with QSWUR by Subject World top 10 & Asia top 10 universities

世界頂尖大學群*		亞洲精選大學群*	
1	Massachusetts Institute of Technology	13	Tsinghua University
2	Stanford University	26	Peking University
3	National University of Singapore	40	Hong Kong University of Science and Technology
4	University of California, Berkeley	54	University of Hong Kong
5	University of Cambridge	15	University of Tokyo
6	ETH Zurich-Swiss Federal Institute of Technology	32	Kyoto University
7	Nanyang Technological University	3	National University of Singapore
8	University of Oxford	7	Nanyang Technological University
9	California Institute of Technology	22	Seoul National University
10	Imperial College London	23	Korea Advanced Institute of Science & Technology

* 學校名稱前方數字為 QS World University Rankings by Subject 2022 — Chemical Engineering 排名序位。

- Comparing the differences of topics development

Topic ID	Topic 1st-3rd Relevance Keyphrases	論文數佔比 World Top 10 Universities	論文數佔比 Asia Selected 10 Universities	論文數佔比 National Taiwan University
T.3479	Carbon Dioxide; Electrocatalysts; Chemical Reduction	2.05%	1.37%	1.46%
T.4025	Oxygen Production; Electrocatalysts; Catalyst	1.78%	1.94%	2.12%
T.5315	Organic Polymers; Triazines; Porous	1.35%	1.17%	0.66%
T.350	Zinc Air Batteries; Electrocatalysts; Catalyst	1.09%	1.57%	1.20%
T.5899	Catalyst; Cobalt Phosphide; Water Splitting	0.87%	1.19%	1.33%
T.2252	Cyanogen; Graphitic Carbon Nitride; Photocatalysts	0.83%	1.41%	1.06%
T.153	Thin Film Composite Membranes; Gas Transport; Gas	0.77%	0.44%	0.53%
T.1412	Bismuth Vanadium Tetraoxide; Photoelectrochemical Cell; Cathodes	0.75%	0.68%	0.27%
T.7236	Osmosis; Thin Film Composite Membranes; Membrane	0.72%	0.47%	0.66%
T.1584	Droplets; Microfluidics; Lab-on-a-chip Devices	0.72%	0.69%	0.40%
T.2556	Microreactor; Continuous Flow; Batch Process	0.68%	0.63%	0.00%
T.6	Electrode; Cobaltous Sulfide; Electrode Materials	0.67%	0.65%	0.40%
T.51	Lithium-ion Batteries; Electrode; Electrochemical Properties	0.64%	0.51%	0.00%
T.9673	Alkene; Cross-coupling Reactions; Photocatalysis	0.60%	0.87%	0.27%
T.8060	Bioprinting; Three-Dimensional Printing; Tissue Engineering	0.59%	0.49%	0.53%

Data Analysis Services
– Research analysis for disciplines

- Use the latest published highly cited documents, cited documents, and patent cited documents to explore the research fronts.
- Apply social network analysis and strategy coordinate map to investigate the development centrality and maturity among the research subjects.
- Explore the development trends or the research topics

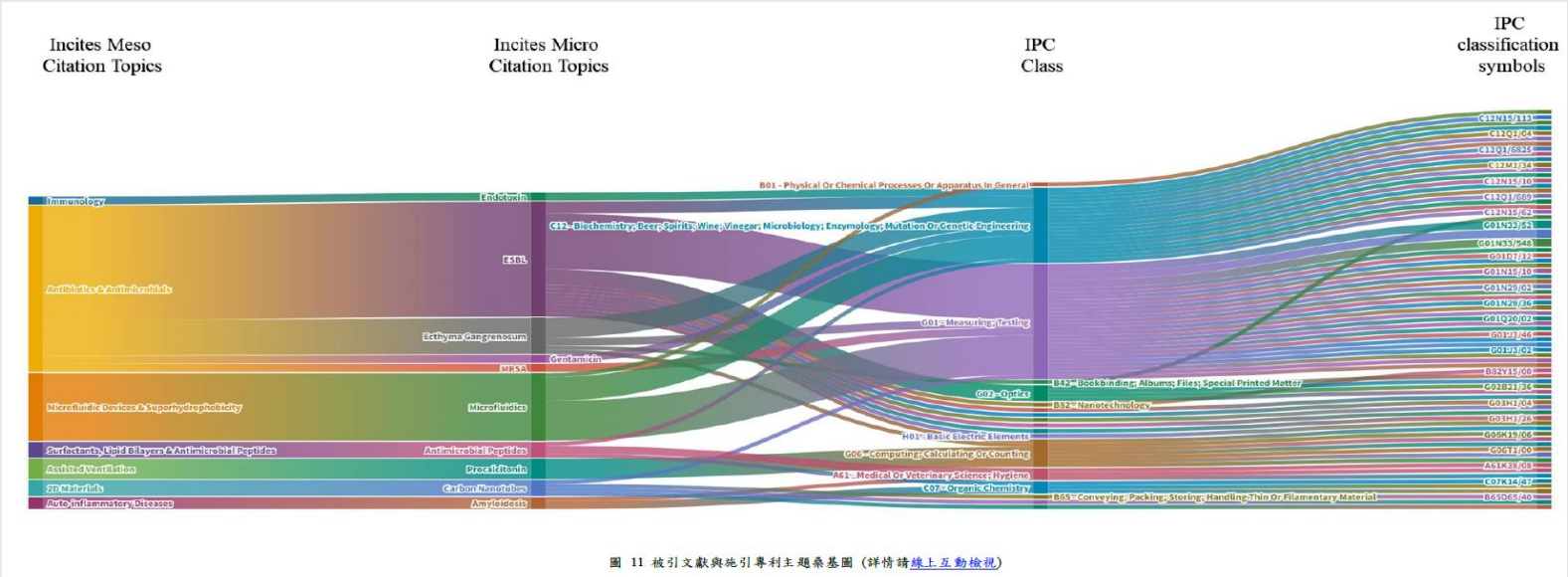
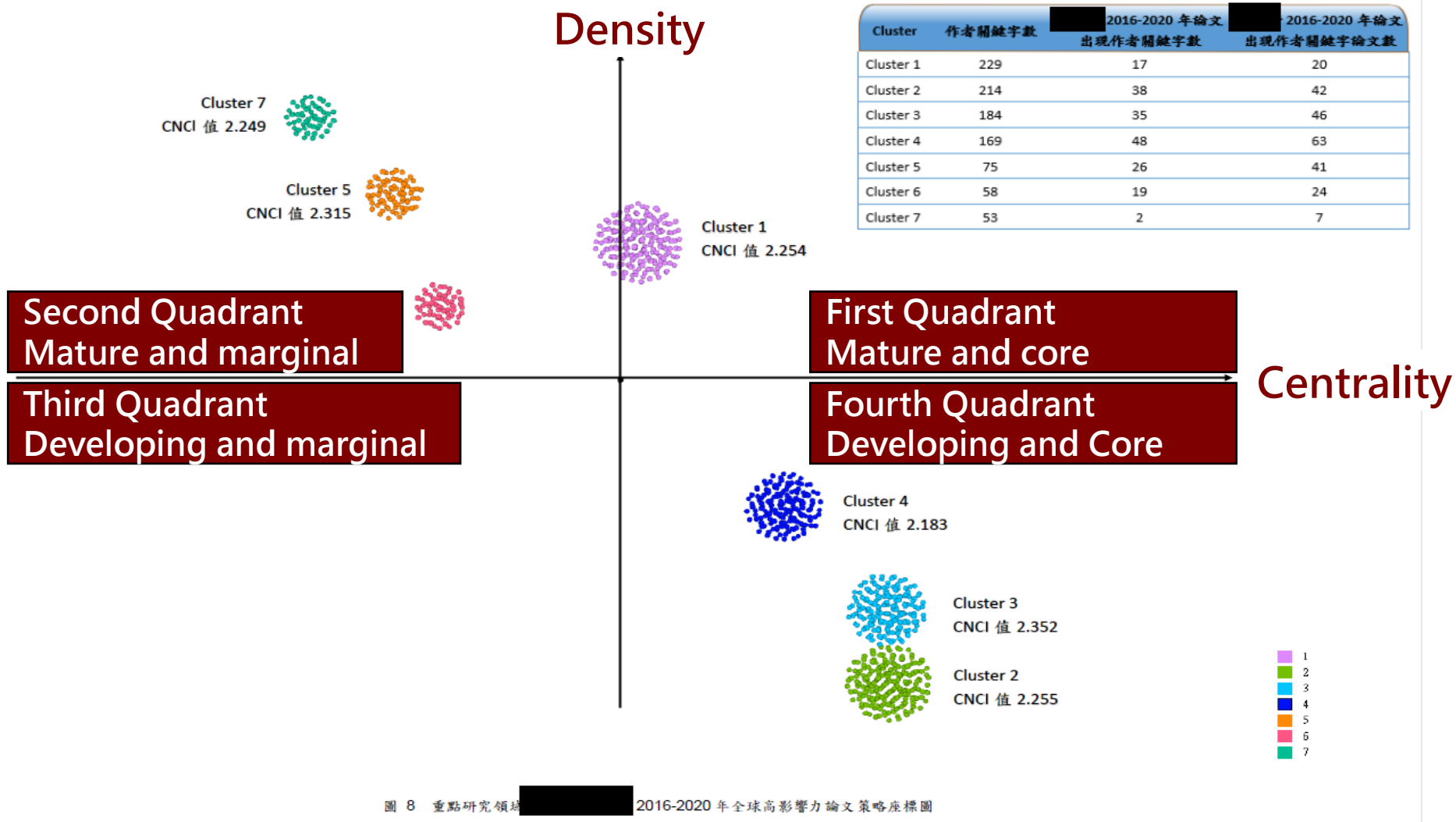


圖 11 被引文獻與施引專利主題桑基圖（詳情請線上互動檢視）

Data Analysis Services
– Research analysis for disciplines



Cluster	作者關鍵字數	[redacted] 2016-2020 年論文出現作者關鍵字數	[redacted] 2016-2020 年論文出現作者關鍵字論文數
Cluster 1	229	17	20
Cluster 2	214	38	42
Cluster 3	184	35	46
Cluster 4	169	48	63
Cluster 5	75	26	41
Cluster 6	58	19	24
Cluster 7	53	2	7

圖 8　重點研究領域[redacted] 2016-2020 年全球高影響力論文策略座標圖

Data Analysis Services
- Library Business

- Problems solving
- Decision making
- Service planning
- Usage analyzing

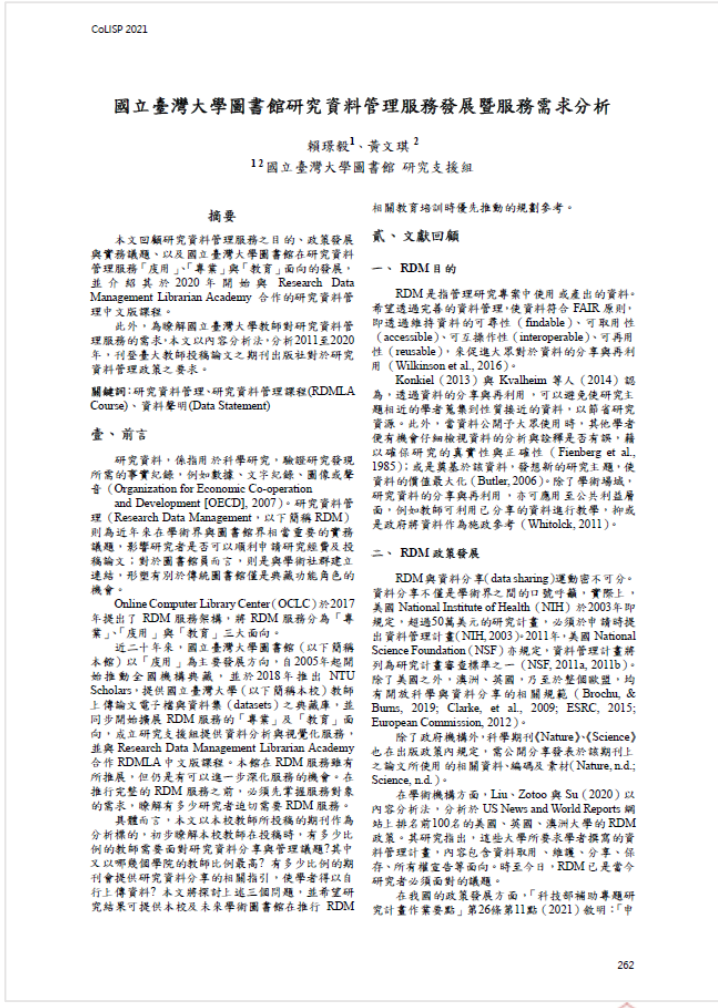
NTUL-L-202001-0001

臺灣大學 2015-2019 年
期刊使用分析報告

報告單位：國立臺灣大學圖書館研究支援組

報告人：林秋蕙

報告日期：109 年 7 月 28 日



CoLISP 2021

國立臺灣大學圖書館研究資料管理服務發展暨服務需求分析

賴琮毅[1]、黃文琪[2]
[1][2]國立臺灣大學圖書館 研究支援組

摘要

本文回顧研究資料管理服務之目的、政策發展與實務議題，以及國立臺灣大學圖書館在研究資料管理服務「度用」、「專業」與「教育」面向的發展，並介紹其於 2020 年開始與 Research Data Management Librarian Academy 合作的研究資料管理中文版課程。

此外，為瞭解國立臺灣大學教師對研究資料管理服務的需求，本文以內容分析法，分析 2011 至 2020 年，刊登臺大教師投稿論文之期刊出版社對於研究資料管理政策之要求。

關鍵詞：研究資料管理、研究資料管理課程(RDMLA Course)、資料聲明(Data Statement)

壹、前言

研究資料，係指用於科學研究，驗證研究發現所需的事實紀錄，例如數據、文字紀錄、圖像或聲音（Organization for Economic Co-operation and Development [OECD], 2007）。研究資料管理（Research Data Management，以下簡稱 RDM）則為近年來在學術界與圖書館界相當重要的實務議題，影響研究者是否可以順利申請研究經費及投稿論文；對於圖書館員而言，則是與學術社群建立連結，形塑有別於傳統圖書館僅是典藏功能角色的機會。

Online Computer Library Center（OCLC）於 2017 年提出了 RDM 服務架構，將 RDM 服務分為「專業」、「度用」與「教育」三大面向。

近二十年來，國立臺灣大學圖書館（以下簡稱本館）以「度用」為主要發展方向，自 2005 年起開始推動全國機構典藏，並於 2018 年推出 NTU Scholars，提供國立臺灣大學（以下簡稱本校）教師上傳論文電子檔與資料集（datasets）之典藏庫，並同步開始擴展 RDM 服務的「專業」及「教育」面向，成立研究支援組提供資料分析與視覺化服務，並與 Research Data Management Librarian Academy 合作 RDMLA 中文版課程。本館在 RDM 服務雖有所推展，但仍是有可以進一步深化服務的機會，在推行完整的 RDM 服務之前，必須先掌握服務對象的需求，瞭解有多少研究者迫切需要 RDM 服務。

具體而言，本文以本校教師所投稿的期刊作為分析標的，初步瞭解本校教師在投稿時，有多少比例的教師需要面對研究資料分享與管理議題？其中又以哪幾個學院的教師比例最高？有多少比例的期刊會提供研究資料分享的相關指引，使學者得以自行上傳資料？本文將探討上述三個問題，並希望研究結果可提供本校及未來學術圖書館在推行 RDM 相關教育培訓時優先推動的規劃參考。

貳、文獻回顧

一、 RDM 目的

RDM 是指管理研究專案中使用或產出的資料。希望透過完善的資料管理，使資料符合 FAIR 原則，即透過維持資料的可尋性（findable）、可取用性（accessible）、可互操作性（interoperable）、可再用性（reusable），來促進大眾對於資料的分享與再利用（Wilkinson et al., 2016）。

Konkiel（2013）與 Kvalheim 等人（2014）認為，透過資料的分享與再利用，可以避免使研究主題相近的學者蒐集到性質接近的資料，以節省研究資源。此外，當資料公開予大眾使用時，其他學者便有機會仔細檢視資料的分析與詮釋是否有誤，藉以確保研究的真實性與正確性（Fienberg et al., 1985）；或是奠基於該資料，發想新的研究主題，使資料的價值最大化（Butler, 2006）。除了學術場域，研究資料的分享與再利用，亦可應用至公共利益層面，例如教師可利用己分享的資料進行教學，抑或是政府將資料作為施政參考（Whitolck, 2011）。

二、 RDM 政策發展

RDM 與資料分享（data sharing）運動密不可分。資料分享不僅是學術界之間的口號吶喊，實際上，美國 National Institute of Health（NIH）於 2003 年即規定，超過 50 萬美元的研究計畫，必須於申請時提出資料管理計畫（NIH, 2003）。2011 年，美國 National Science Foundation（NSF）亦規定，資料管理計畫將列為研究計畫審查標準之一（NSF, 2011a, 2011b）。除了美國之外，澳洲、英國，乃至於整個歐盟，均有開放科學與資料分享的相關規範（Brochu, & Burns, 2019; Clarke, et al., 2009; ESRC, 2015; European Commission, 2012）。

除了政府機構外，科學期刊《Nature》、《Science》也在出版政策內規定，需公開分享發表於該期刊上之論文所使用的相關資料、編碼及素材（Nature, n.d.; Science, n.d.）。

在學術機構方面，Liu、Zotoo 與 Su（2020）以內容分析法，分析於 US News and World Reports 網站上排名前 100 名的美國、英國、澳洲大學的 RDM 政策。其研究指出，這些大學所要求學者撰寫的資料管理計畫，內容包含資料取用、維護、分享、保存、所有權宣告等面向。時至今日，RDM 已是當今研究者必須面對的議題。

在我國的政策發展方面，「科技部補助專題研究計畫作業要點」第 26 條第 11 點（2021）敘明：「申

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NTU TOPICS

Finding Authors

Finding Topics

Finding Institutes

- A topic-based service platform focuses on helping users to find potential collaborators via authors, topics, and Institutes.

NTU TOPICS - Researchers

查看個人主題比率

李百祺

研究主題比率
(預設包含目前上圖顯示的作者之所有著作主題)

宏觀研究主題

Clinical & Life Sciences

Physics

中觀研究主題

微觀研究主題

Elastography

Mammography

Arterial Stiffness

Cancer Stem Cells

Photoacoustic Imaging

Cerebral Palsy

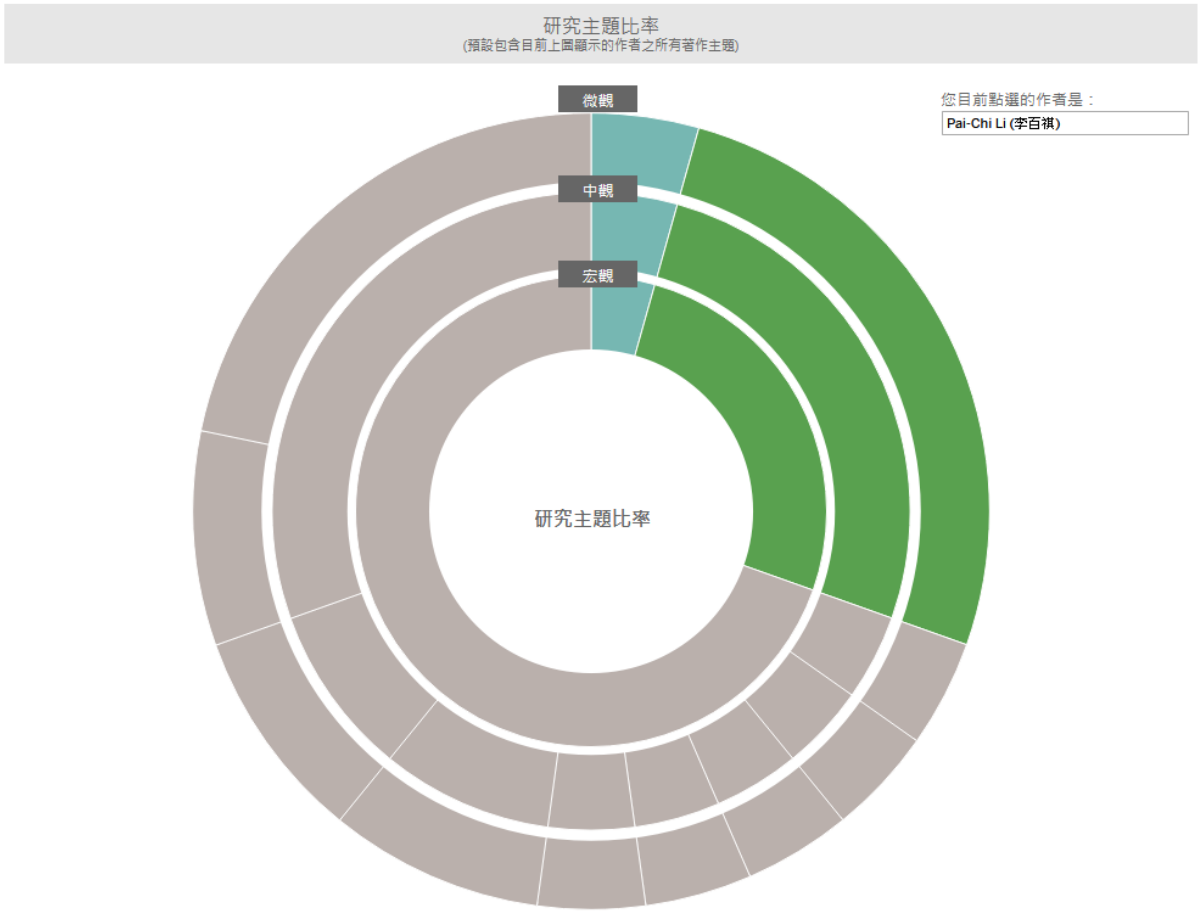
mTOR

Microbubbles

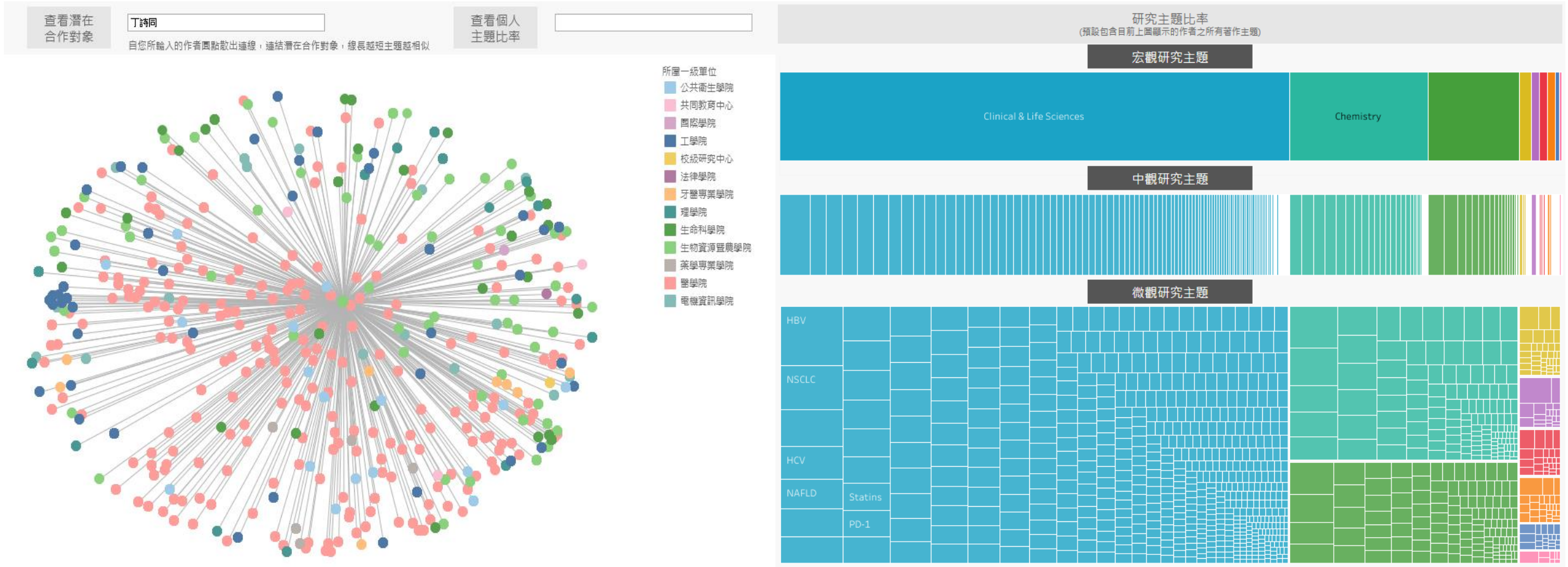
Gastric Cancer

Integrins

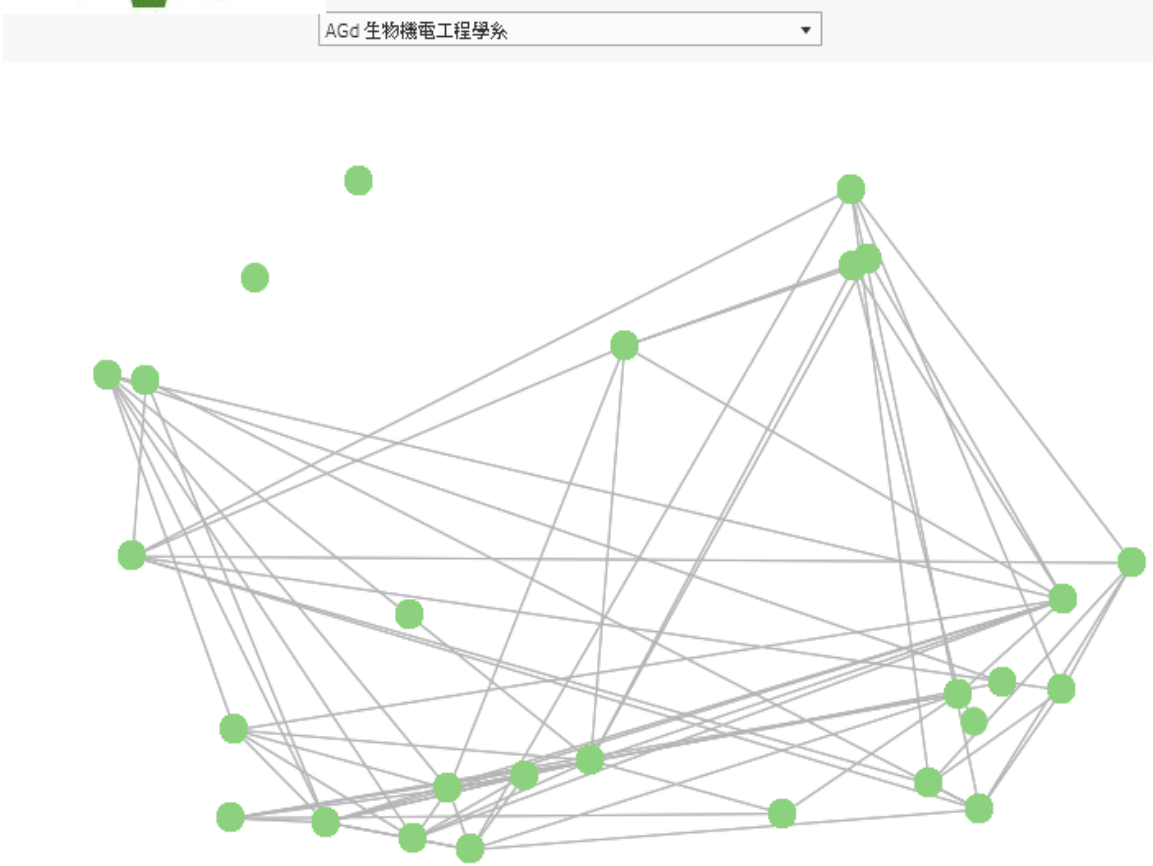
Lamb Waves

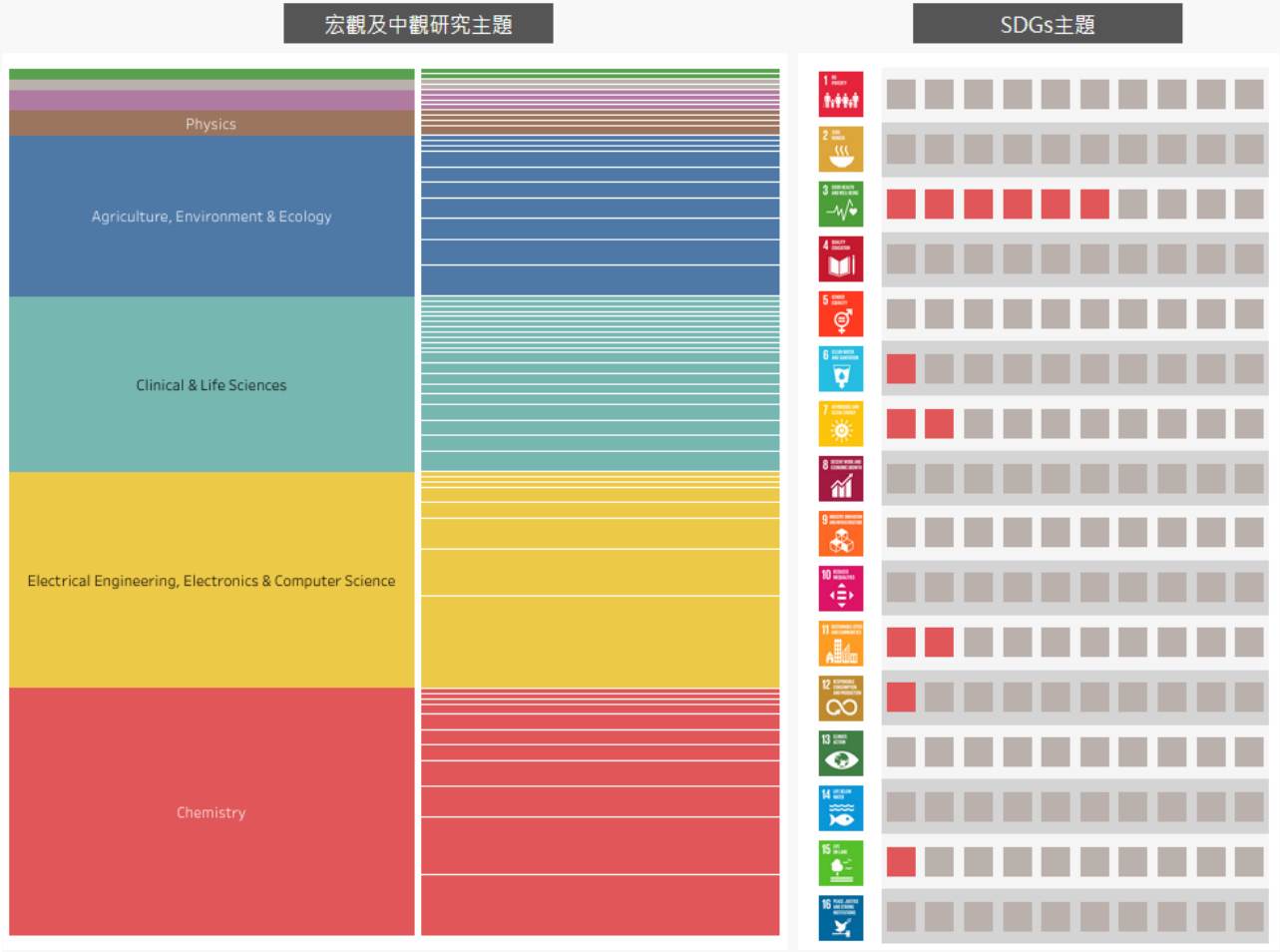


NTU TOPICS - Personal Network

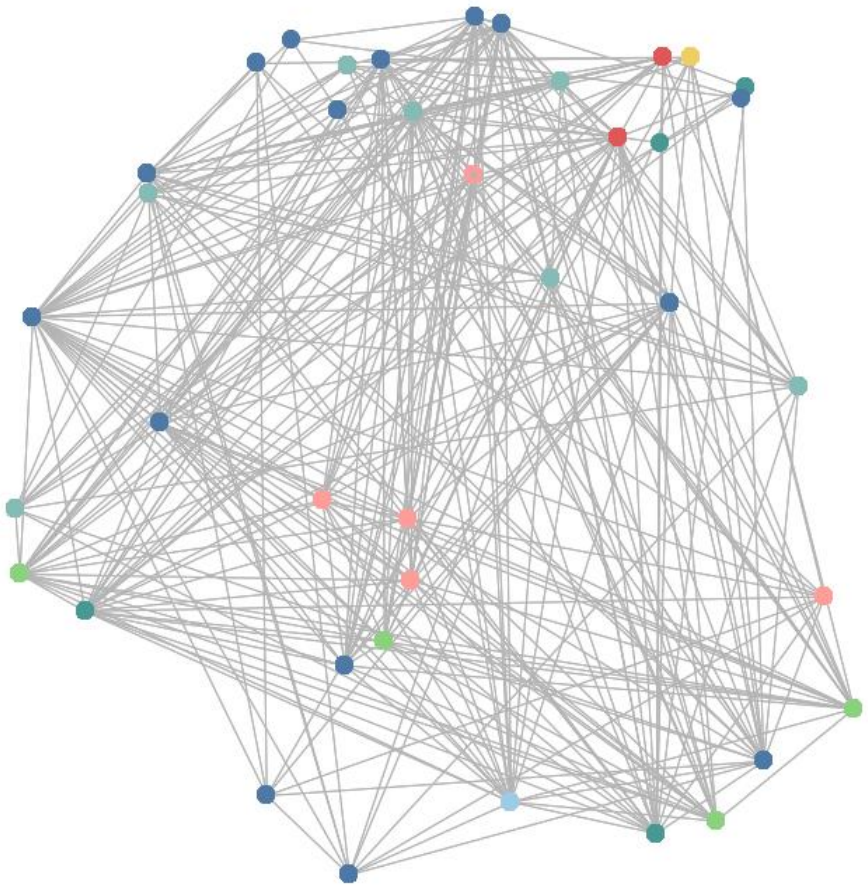


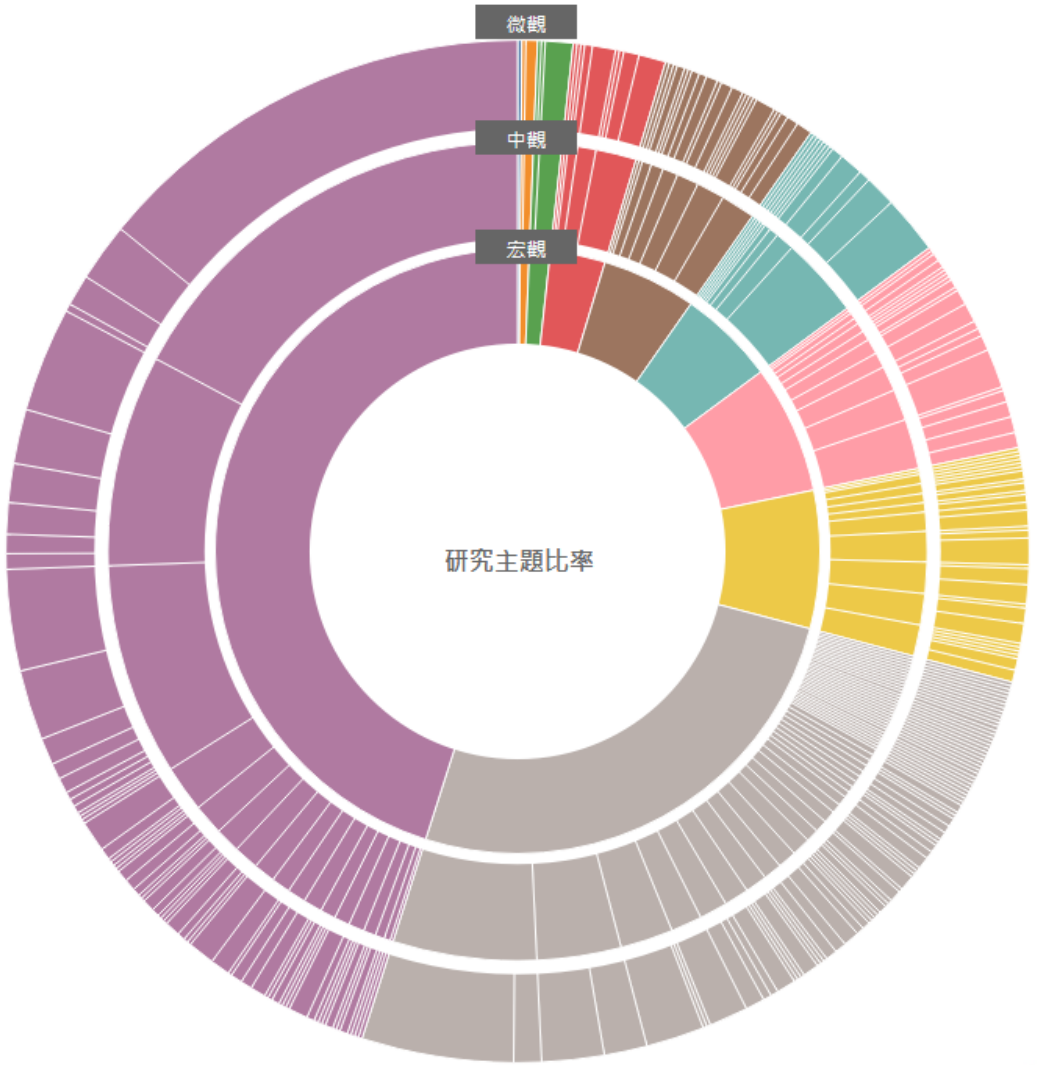
NTU TOPICS - Institutes





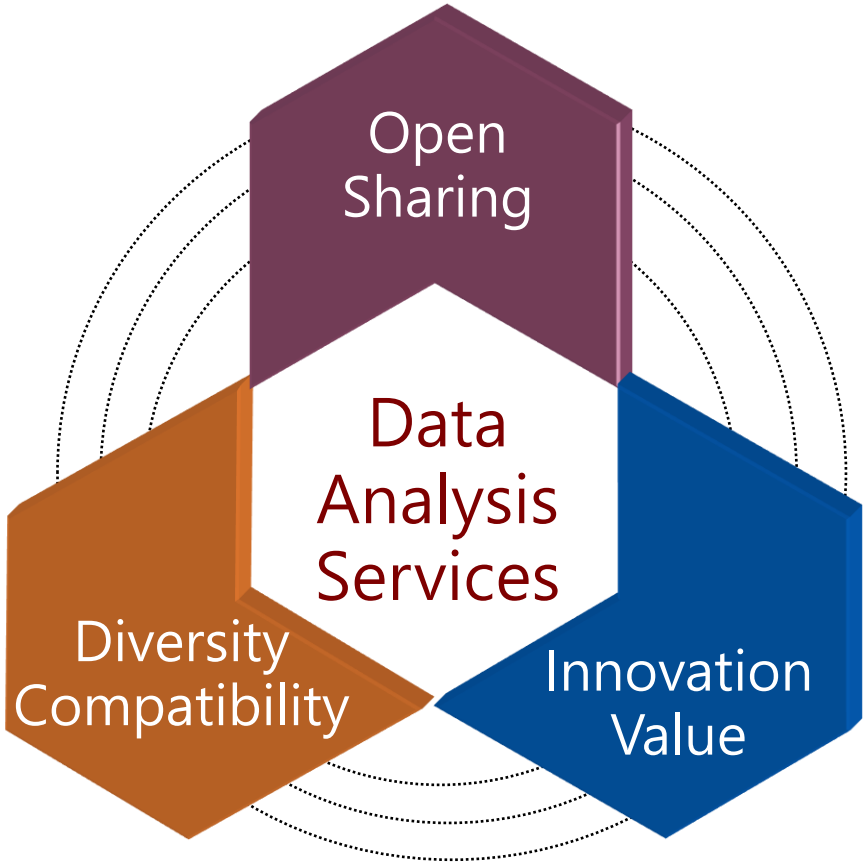
NTU TOPICS – Institute Network





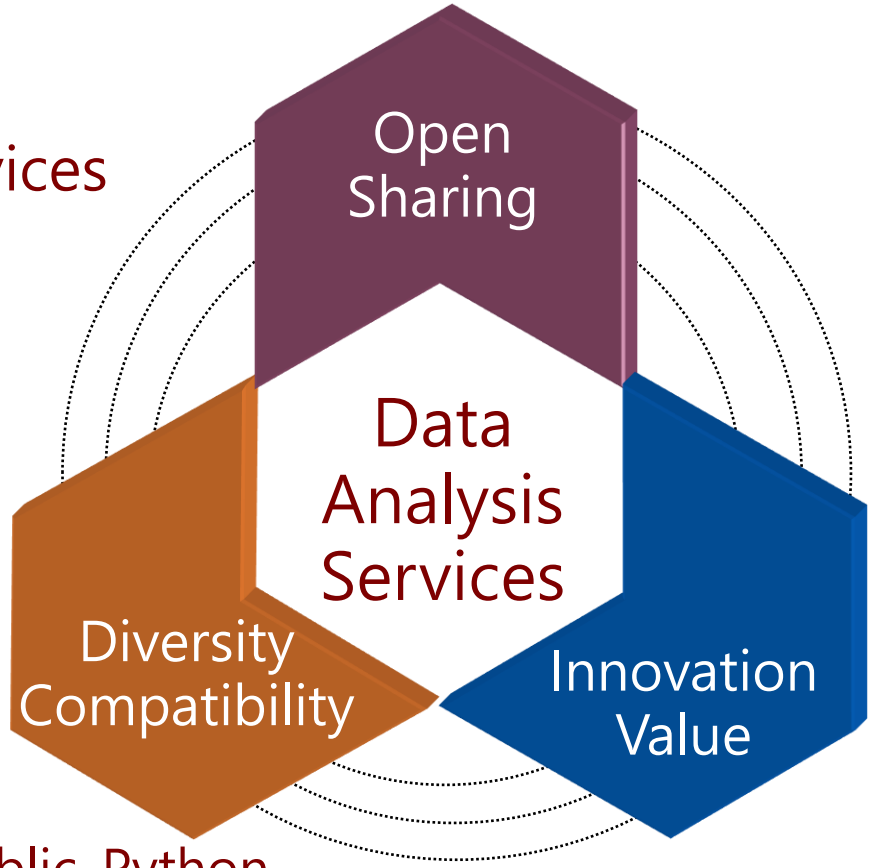
Conclusions

- Open & Sharing
  - Knowledge Sharing
    - Disseminate academic research output @NTU Scholars
    - Deepen library profession @ Reference Services Blog
  - Resource Sharing
    - Provide MASTER/HELP online resources
    - Develop RDMLA Chinese Online Course
    - Maintain Taiwan Academic Institution Collection, TAIR



Conclusions

- Innovation & Value
  - Empower innovative library professional services
  - Initiate Data-driven decision making
  - Enhance library influence and visibility
- Diversity & Compatibility
  - Promote open science
  - Deposit data in diversified formats
  - Analyze data of various sources
  - Utilize multiple tools
    - HistCite, OpenRefine, Tableau Public, Flourish Public, Python



Conclusions – data analysis services

- Not only provide metrics
  - In addition to evaluate or present academic achievements, also help us explore and discovery new topics or research development.
  - Social Network Analysis can break the boundary between languages and limitation of lack of indicators in Chinese journals for bibliometric services
- No template, all customized
  - Customized service for each applicant.
  - Find out academic highlights for each applicant.

Conclusions – data analysis

- Good use of visualization tools
  - Mainly use VOSViewer for social network analysis.
  - Use different visualization tools, for example: Excel, Tableau Public, Flourish, etc. as well.
  - Easy to use and free
- Multiple application examples
  - Attract faculties with different viewpoints in university community.
  - Very helpful for strategy promotion.

Thanks and Questions

NATIONAL TAIWAN UNIVERSITY LIBRARY

SINCE 1928

國立臺灣大學圖書館