



香港城市大學  
City University of Hong Kong

專業 創新 胸懷全球  
Professional · Creative  
For The World

## CityU Scholars

### 香港城市大学 CRIS (在研信息系统) 的建设与服务

戴淑儿; 刘昭华

Presented: 01/12/2021

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# CityU Scholars *A Research Hub of Excellence*

## 香港城市大學 CRIS (在研信息系统) 的建设与服务

第九届中国机构知识库学术研讨会  
2021年12月1-2日

# Presenters

**Alice Tai** (戴淑儿)

Senior Assistant Librarian (高级助理馆长)

Head, Research Support & Scholarly Communication (研究支援及学术交流部主管)

**Eliot LIU** (刘昭华)

Assistant Librarian (助理馆长)

Research Support & Scholarly Communication (研究支援及学术交流部)

Run Run Shaw Library (邵逸夫图书馆)

City University of Hong (香港城市大学)

# Agenda

- 香港城市大学与图书馆简介 (An Introduction to City University of Hong Kong (CityU) & the Library)
- CityU Scholars – 香港城市大学CRIS的建设与服务 (The Development and Services of CityU Scholars)
  - 项目背景 (Project Background)
  - 项目发展 (Project Development)
  - 门户网站特点 (Portal Features)
  - 图书馆相关服务 (Related Library Services)
- 未来展望 (Way Ahead)



# 城市大学简介

- 位于香港九龙塘，简称城大
- 大學教育資助委員會資助大學
- 学院：10 / 学系：30

商科	工科	理学	法律
数据科学	创意媒体	人文社会科	
动物医学及生命科学		能源及环境学	

- 研究中心：39
- 内地研究院：深圳，成都
- 国际学术人员：70%  
(来自35个不同国家和地区)

数据来源：城大网页 (<https://www.cityu.edu.hk/zh-hk/about/cityu-at-a-glance>)  
2021年11月19日





# 5个核心研究领域 (策略性发展计划 Strategic Plan)

## (1) One Health 健康一体化

Developing and integrating interdisciplinary, problem-based research collaboration and communication in all aspects of health-related issues

## (2) Digital Society 数码化社会

Developing digital innovations for daily life and a thorough understanding of the relationship between digital advancement and society.

## (3) Smart City 智慧城市

Creating innovative solutions to address regional and global concerns, such as sustainable energy, climate change, through collaborative efforts among diverse disciplines and programmes.

## (4) Matter 物质科学

An interdisciplinary study of matter and materials in their various forms, covering areas from synthesis to processing and fabrication, from properties evaluation to modification, and from design to applications.

## (5) Brain 脑科学

An interdisciplinary joint effort to provide a better understanding of the structure and functions of the human brain and the understanding of mind, including potential of human-machine interfaces.



# 第4位

[QS] 2021年「建校未满50年全球最佳学府」

# 第53位

[QS] 2022年世界最佳大学排名

# 14位

教研人员膺选为科睿唯安 (Clarivate)  
2020年「高度被引用的科学家」

# 香港第1位

- 全球首100家获颁最多美国专利的大学 (2020年)
- QS世界大学排名榜 2017至2021年间「论文引用数量」的五年平均值

## Our New Colleague - The Service Robot



Sibob (思博)

His nickname is Bob / 阿博 / 小博

## Run Run Shaw Library (邵逸夫图书馆)

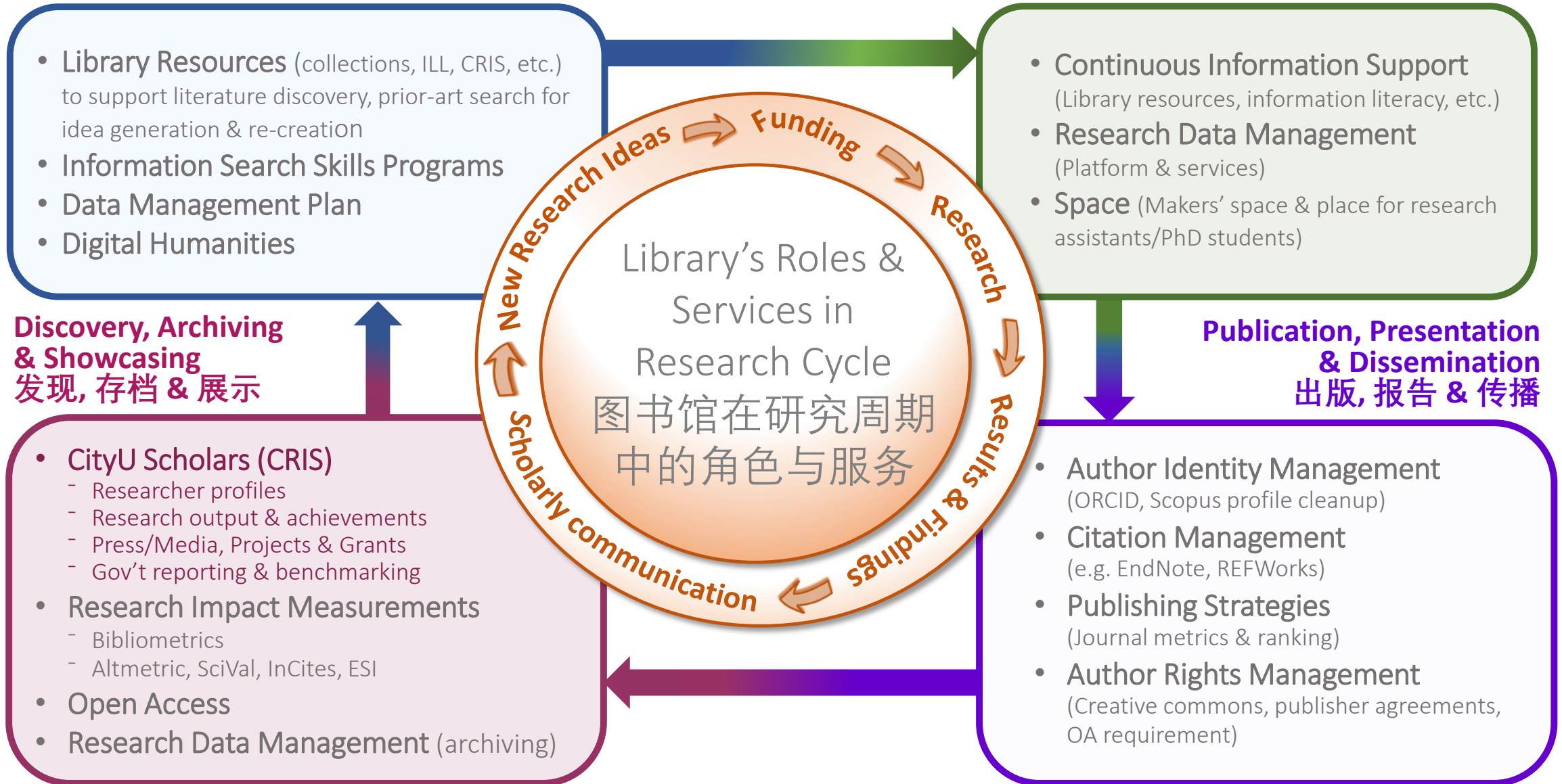


Collection	Number	
<b>Volumes in Library</b>	1,211,700	volumes
• <b>Monographs</b>	1,034,000	volumes
• <b>Bound Serials</b>	177,700	volumes
<b>Current Serials</b>	1,030	titles
<b>Audio-visual Materials</b>	71,000	items
<b>e-books</b>	2,174,500	titles
<b>e-journals</b>	114,900	titles
<b>e-audio &amp; e-video</b>	186,700	titles
<b>Databases</b>	390	titles



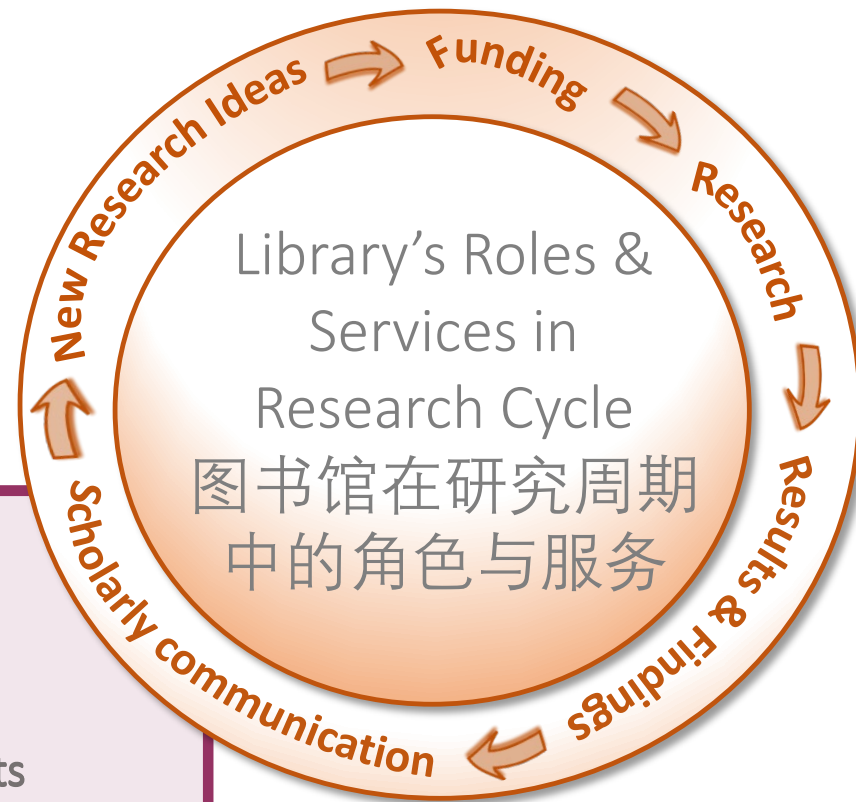
## Planning and Proposal 规划与提案

## Research Project 研究项目



## Discovery, Archiving & Showcasing 发现, 存档 & 展示

- **CityU Scholars (CRIS)**
  - Researcher profiles
  - Research output & achievements
  - Press/Media, Projects & Grants
  - Gov't reporting & benchmarking
- **Research Impact Measurements**
  - Bibliometrics
  - Altmetric, SciVal, InCites, ESI
- **Open Access**
- **Research Data Management (archiving)**





# CityU Scholars

Current Research Information System (CRIS)  
在研信息系统

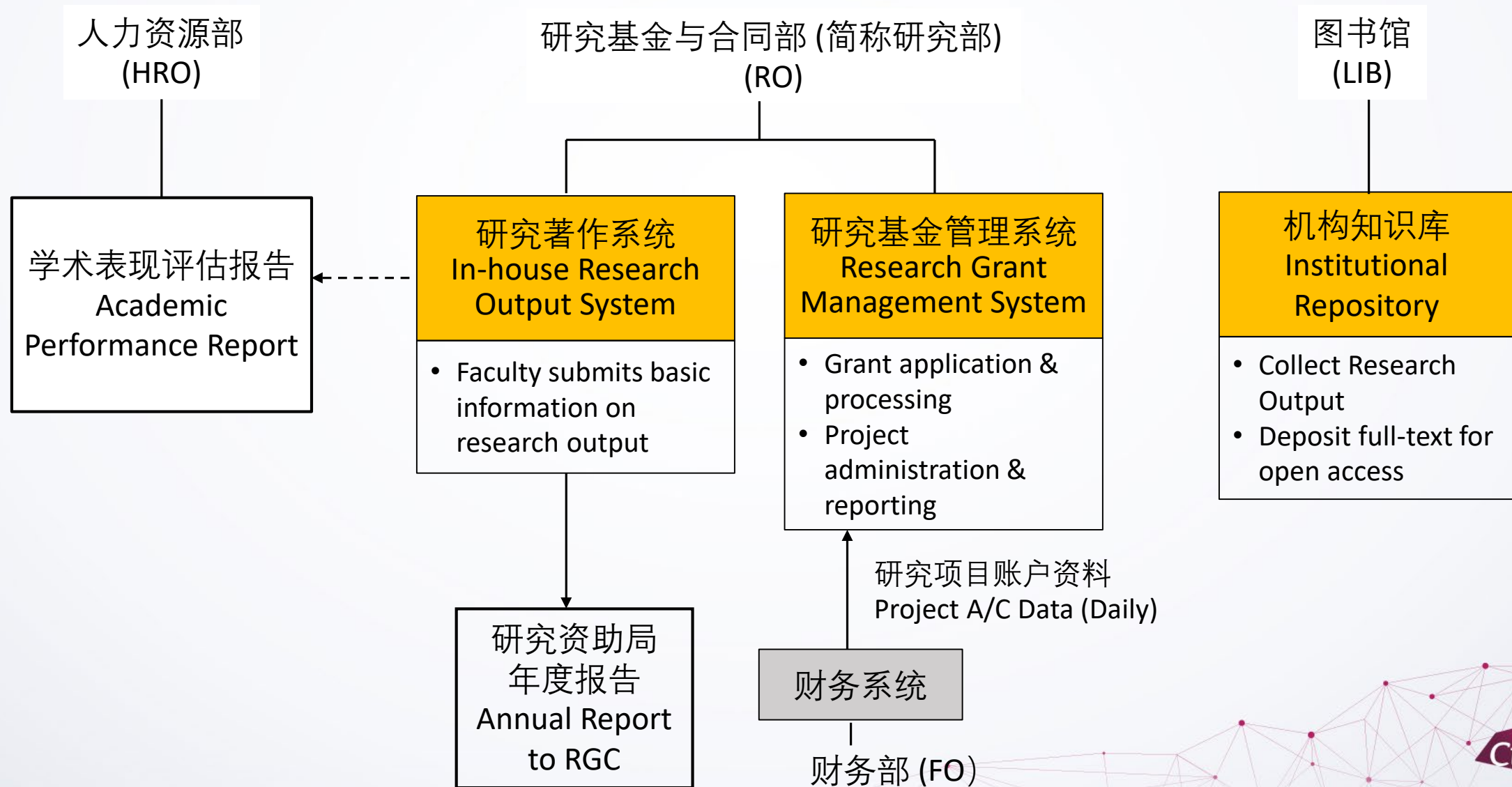
Research Information Management System (RIMS)  
研究信息管理系统

**CityU Scholars**  
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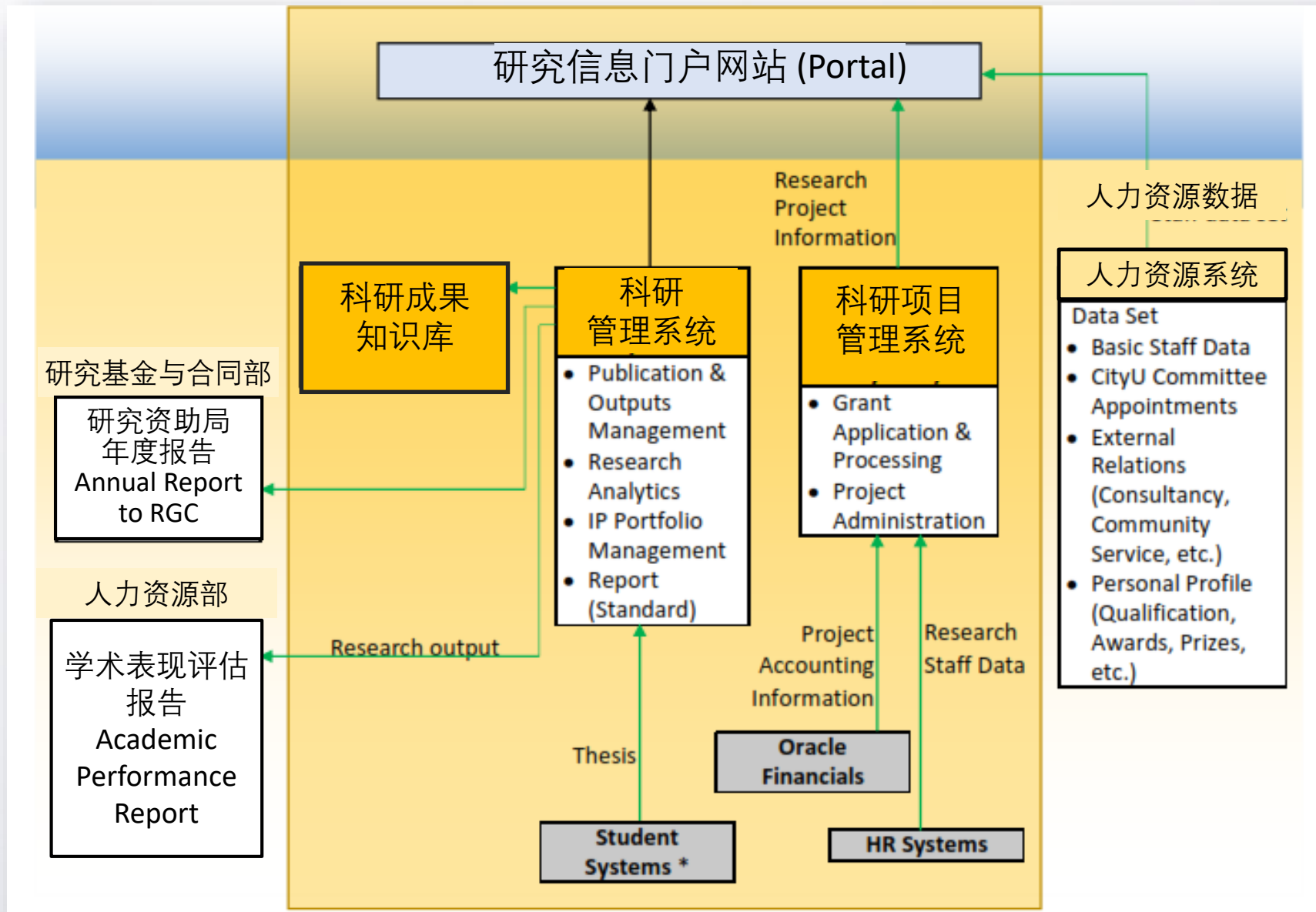
# Project Background

## 项目发展背景

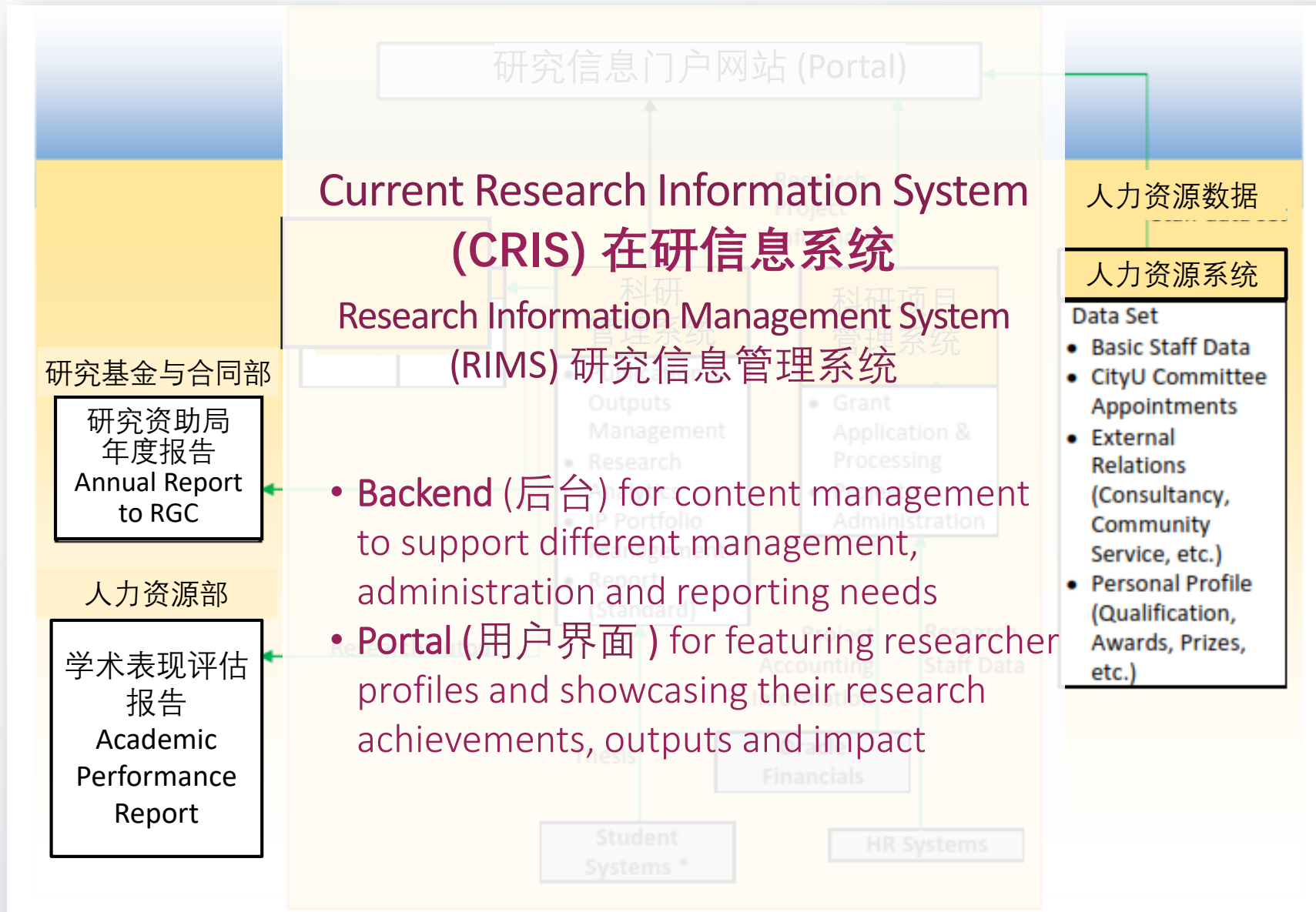
# Problems – Silo Systems (困难：分散的系统)



# Ideal – An integrated System (理想：一个整合的系统)



# Ideal – An integrated System (理想：一个整合的系统)



# The Project Management Structure 项目管理架构

## Project Steering Committee (PSC) 项目指导委员会

- **Co-directors:** Vice President (Research) and the then Associate Provost (Quality Assurance) [Now the Provost]
- **Members:** Vice President (Administration), CIO, Librarian, members of Project Assurance Team
- **Roles:** Gives direction, oversees project development and makes decision on recommendations



### Enterprise Solutions Unit

#### 资讯系统服务处 (简称IT部)

- Technical support
- User account management
- Supervision, patents
- Dashboard / report maintenance

### Library 图书馆

- Research output data harvesting
- Research output metadata validation
- Student Theses
- Open access / full text management
- Researcher profile troubleshooting
- CityU Scholars Portal display

### Research & Contracts Office

#### 研究基金与合同部 (简称研究部)

- RGC research output reporting
- Grants and Projects



## Other Research Information Data Providers

Human Resources Office

Finance Office

Knowledge Transfer Office

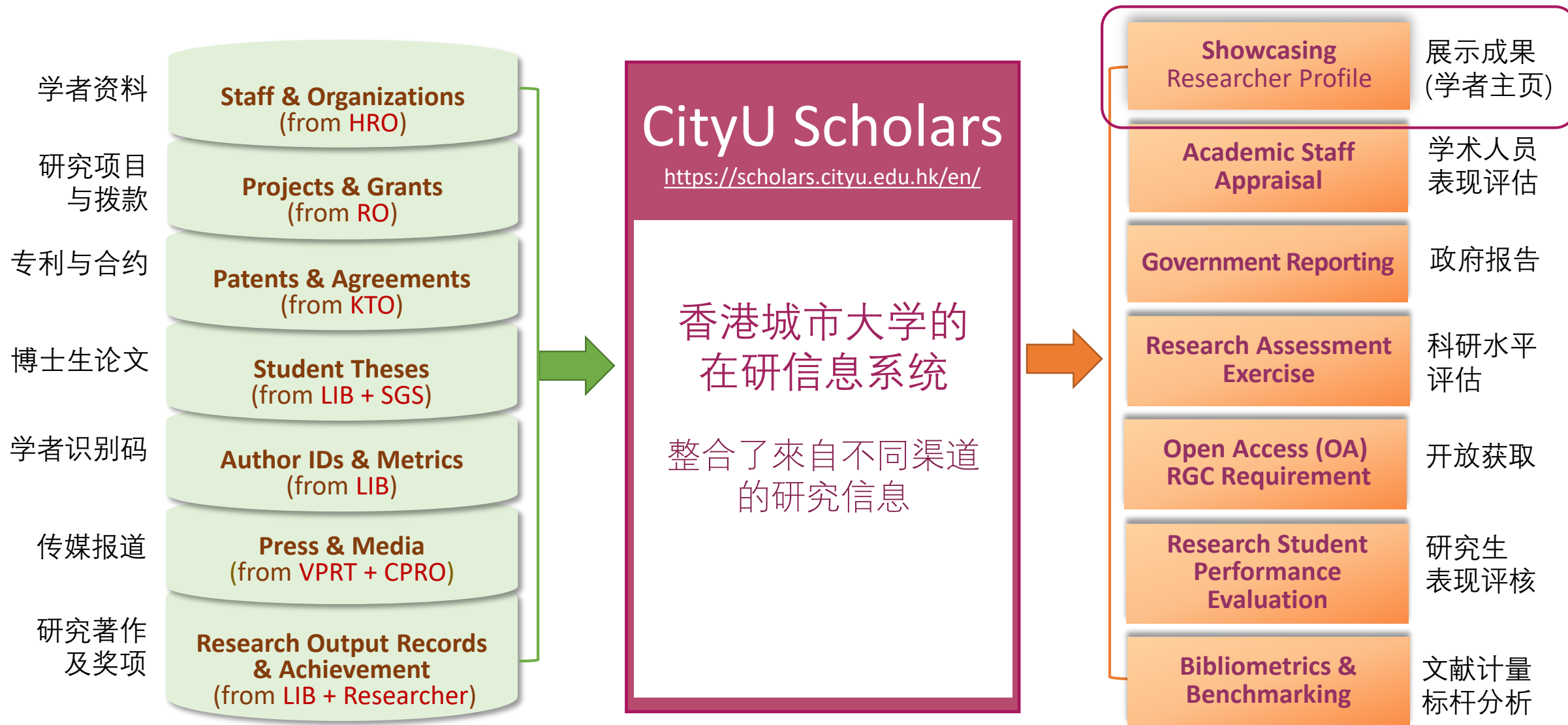
School of Graduate Studies



# The Project Timeline for CityU Scholars (项目时间表)



# Data In & Information Out 资讯的进与出

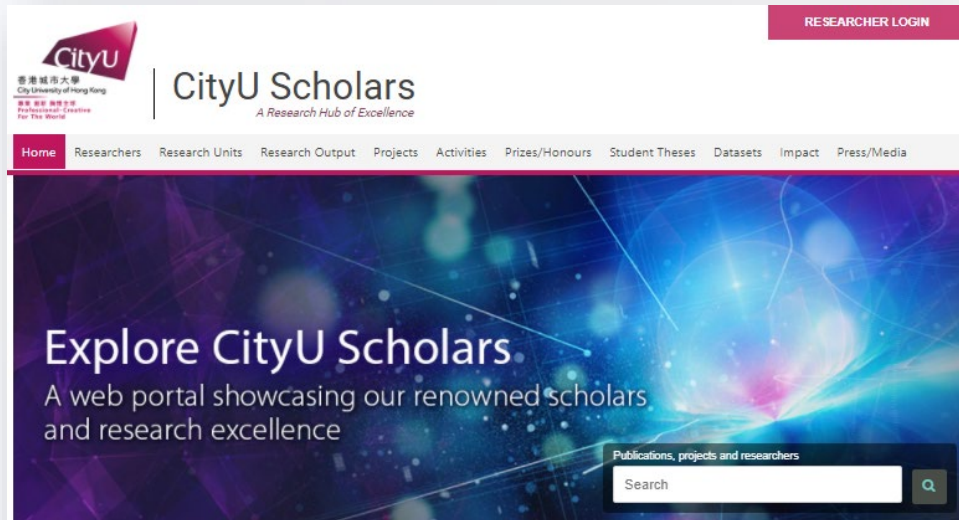


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# Portal Features

## 门户网站特点

# 最新/最多引文的论文及研究相关的新闻



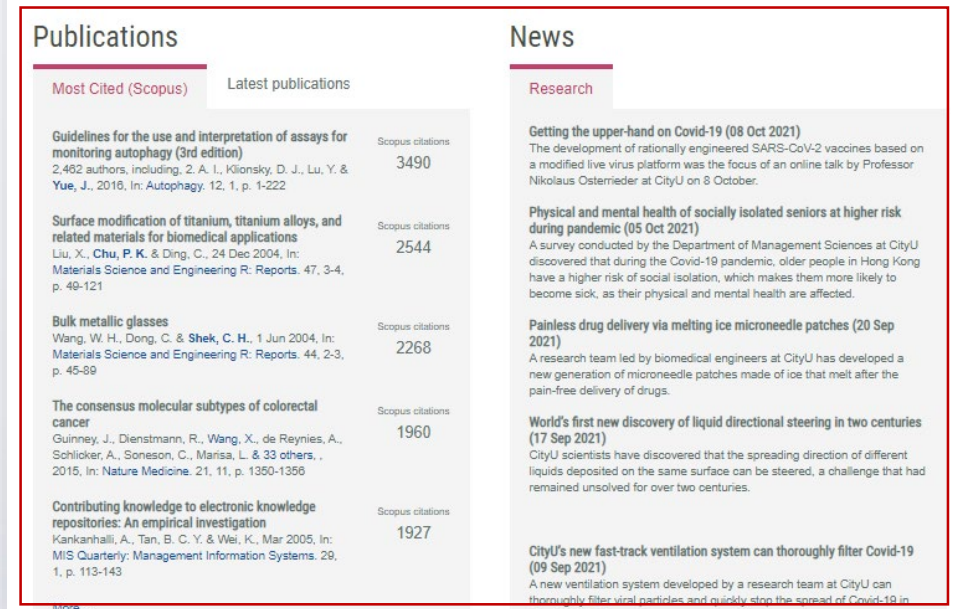
CityU Scholars  
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Home Researchers Research Units Research Output Projects Activities Prizes/Honours Student Theses Datasets Impact Press/Media

Explore CityU Scholars  
A web portal showcasing our renowned scholars and research excellence

Publications, projects and researchers

Search



**Publications**

Most Cited (Scopus) Latest publications

**Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition)**  
2,462 authors, including, 2 A. I. Klionsky, D. J. Lu, Y. & Yue, J., 2016, In: *Autophagy*, 12, 1, p. 1-222  
Scopus citations: 3490

**Surface modification of titanium, titanium alloys, and related materials for biomedical applications**  
Liu, X., Chu, P. K. & Ding, C., 24 Dec 2004, In: *Materials Science and Engineering R: Reports*, 47, 3-4, p. 49-121  
Scopus citations: 2544

**Bulk metallic glasses**  
Wang, W. H., Dong, C. & Shek, C. H., 1 Jun 2004, In: *Materials Science and Engineering R: Reports*, 44, 2-3, p. 45-89  
Scopus citations: 2268

**The consensus molecular subtypes of colorectal cancer**  
Guinney, J., Dienstmann, R., Wang, X., de Reynies, A., Schliker, A., Songson, C., Marisa, L. & 33 others, 2015, In: *Nature Medicine*, 21, 11, p. 1350-1356  
Scopus citations: 1960

**Contributing knowledge to electronic knowledge repositories: An empirical investigation**  
Kankanhalli, A., Tan, B. C. Y. & Wei, K., Mar 2005, In: *MIS Quarterly: Management Information Systems*, 29, 1, p. 113-143  
Scopus citations: 1927

**News**

**Research**

**Getting the upper-hand on Covid-19 (08 Oct 2021)**  
The development of rationally engineered SARS-CoV-2 vaccines based on a modified live virus platform was the focus of an online talk by Professor Nikolaus Osterrieder at CityU on 8 October.

**Physical and mental health of socially isolated seniors at higher risk during pandemic (05 Oct 2021)**  
A survey conducted by the Department of Management Sciences at CityU discovered that during the Covid-19 pandemic, older people in Hong Kong have a higher risk of social isolation, which makes them more likely to become sick, as their physical and mental health are affected.

**Painless drug delivery via melting ice microneedle patches (20 Sep 2021)**  
A research team led by biomedical engineers at CityU has developed a new generation of microneedle patches made of ice that melt after the pain-free delivery of drugs.

**World's first new discovery of liquid directional steering in two centuries (17 Sep 2021)**  
CityU scientists have discovered that the spreading direction of different liquids deposited on the same surface can be steered, a challenge that had remained unsolved for over two centuries.

**CityU's new fast-track ventilation system can thoroughly filter Covid-19 (09 Sep 2021)**  
A new ventilation system developed by a research team at CityU can thoroughly filter viral particles and quickly stop the spread of Covid-19 in




CityU Scholars  
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Home Researchers Research Units **Research Output** Projects Activities Prizes/Honours Student Theses Datasets Impact Press/Media

**Surface modification of titanium, titanium alloys, and related materials for biomedical applications**  
Research output: Journal Publications and Reviews > Review of books or of software (or similar publications/items)

**Overview**

**Author(s)**  
Xuanyong Liu  
Paul K. Chu  
Chuanxian Ding

**2544**  
Scopus Citations

**Detail(s)**

Pages (from-to): 49-121  
Journal / Publication: Materials Science and Engineering R: Reports  
Volume: 47  
Issue number: 3-4  
Publication status: Published - 24 Dec 2004

**Link(s)**

DOI: <https://doi.org/10.1016/j.mser.2004.11.001>  
Final Published version  
[Check@CityU Lib](#)

Link to Scopus: <https://www.scopus.com/record/display.uri?eid=2-s2.0-12344298672&origin=recordpage>  
Permanent Link: [https://scholars.cityu.edu.hk/en/publications/publication\(7cf49781-87cd-43c0-ac01-d4660e9a5b6\).html](https://scholars.cityu.edu.hk/en/publications/publication(7cf49781-87cd-43c0-ac01-d4660e9a5b6).html)

**Abstract**

Titanium and titanium alloys are widely used in biomedical devices and components, especially as hard tissue replacements as well as in cardiac and cardiovascular applications, because of their desirable properties, such as relatively low modulus, good fatigue strength, formability, machinability, corrosion resistance, and biocompatibility. However, titanium and its alloys cannot meet all of the clinical requirements. Therefore, in order to improve the biological, chemical, and mechanical properties, surface modification is often performed. This article reviews the various surface modification technologies pertaining to titanium and titanium alloys including mechanical treatment, thermal spraying, sol-gel, chemical and electrochemical treatment, and ion implantation from the perspective of biomedical engineering. Recent work has shown that the wear resistance, corrosion resistance, and biological properties of titanium and titanium alloys can be improved selectively using the appropriate surface treatment techniques while the desirable bulk attributes of the materials are retained. The proper surface treatment expands the use of titanium and titanium alloys in the biomedical fields. Some of the recent applications are also discussed in this paper. © 2004 Elsevier B.V. All rights reserved.

**Painless drug delivery via melting ice microneedle patches**

**DONNA WONG**  
20 SEP 2021



Dr Xu Chenjie (second from right) and his research team.

A research team led by biomedical engineers at City University of Hong Kong (CityU) has developed a new generation of microneedle patches made of ice that melt after the pain-free delivery of drugs.



CityU

Case studies showing new hope in cancer immunotherapy

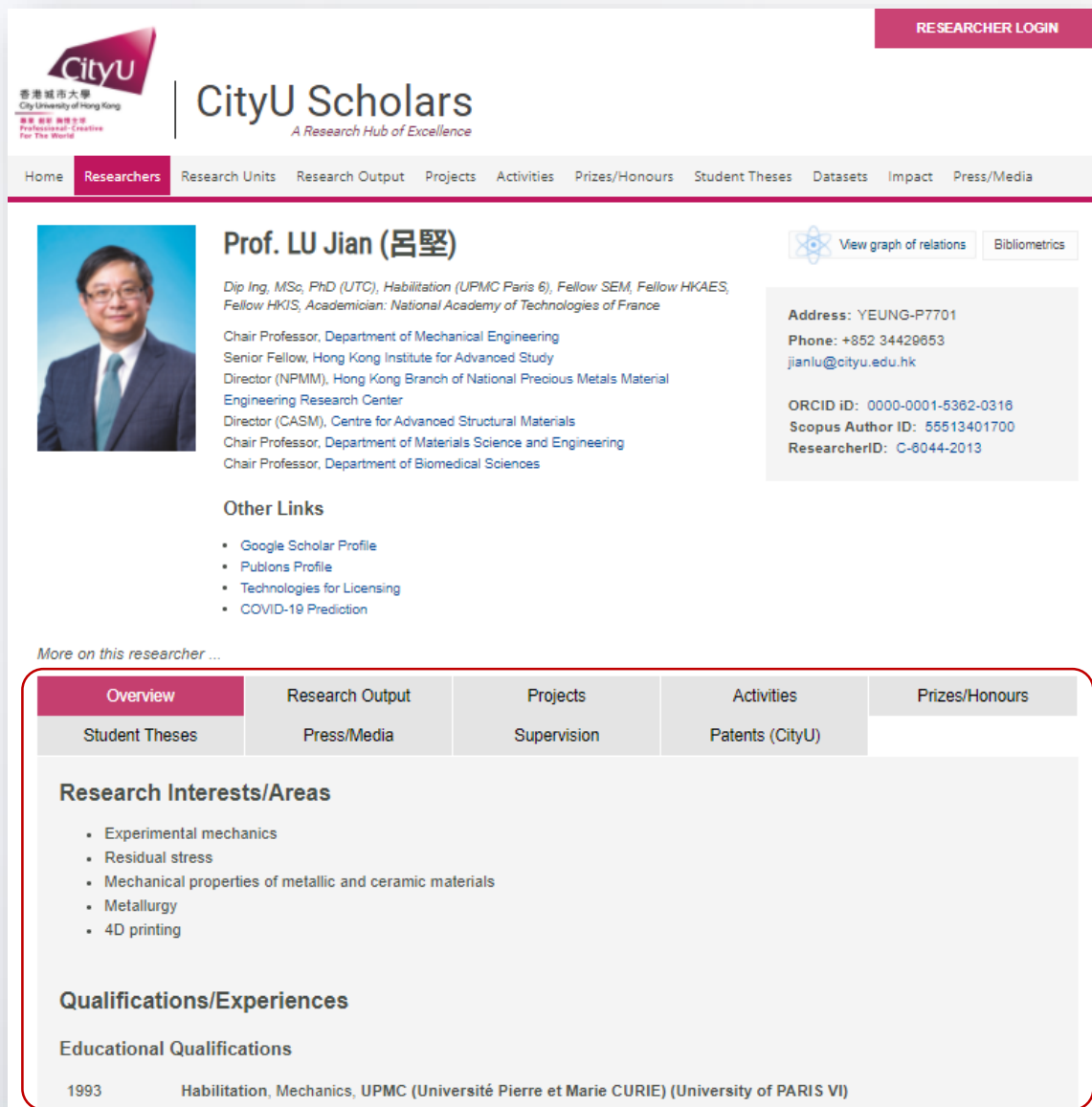
CityU wins two golds and two silvers at the International Exhibition of Inventions of Geneva

World-first coating developed at CityU can enhance medical, aerospace equipment

CityU receives Grand Challenges Explorations grant for groundbreaking research in global health and development



# 学者主页



RESEARCHER LOGIN

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**Prof. LU Jian (呂堅)**

*Dip Ing, MSc, PhD (UTC), Habilitation (UPMC Paris 6), Fellow SEM, Fellow HKAES, Fellow HKIS, Academician: National Academy of Technologies of France*

View graph of relations Bibliometrics

Address: YEUNG-P7701  
Phone: +852 34426653  
jianlu@cityu.edu.hk

ORCID iD: 0000-0001-5362-0316  
Scopus Author ID: 55513401700  
ResearcherID: C-8044-2013

Chair Professor, Department of Mechanical Engineering  
Senior Fellow, Hong Kong Institute for Advanced Study  
Director (NPMM), Hong Kong Branch of National Precious Metals Material Engineering Research Center  
Director (CASM), Centre for Advanced Structural Materials  
Chair Professor, Department of Materials Science and Engineering  
Chair Professor, Department of Biomedical Sciences

**Other Links**

- Google Scholar Profile
- Publons Profile
- Technologies for Licensing
- COVID-19 Prediction

More on this researcher ...

Overview	Research Output	Projects	Activities	Prizes/Honours
Student Theses	Press/Media	Supervision	Patents (CityU)	

**Research Interests/Areas**

- Experimental mechanics
- Residual stress
- Mechanical properties of metallic and ceramic materials
- Metallurgy
- 4D printing

**Qualifications/Experiences**

**Educational Qualifications**

1993 Habilitation, Mechanics, UPMC (Université Pierre et Marie CURIE) (University of PARIS VI)

Research related information and all-round achievements 全方位展示研究成果

- Overview 个人简介
- Research Output 著作论文
- Projects 项目基金
- Activities 学术活动
- Prizes/Honours 荣誉奖项
- Student Theses 研究生论文
- Press/Media 媒体报道
- Supervision 研究生指导
- Patents 专利
- Position(s) Available 招生信息



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## Researcher's various author IDs and profiles (学者的其他个人主页与ID)

- Departmental webpage 院系个人主页
- Google Scholar profile 谷歌学术主页
- Publons profile Publons主页
- ORCID iD
- Scopus Author ID
- ResearcherID



# 招生信息

More on this researcher ...

Overview	Research Output	Projects	Activities	Prizes/Honours
Student Theses	Press/Media	Supervision	Patents (CityU)	Position(s) Available

## Position(s) Available

### Visiting Faculty, Post Doctoral Fellow, Senior Research Associate, and/or Research Assistant

**Duties:** Research in different bibliometrics. Exciting opportunity to work in an interdisciplinary team to explore metrics for research impact measurement.

**Requirements:** Graduate Degree and/or related experience in Library and Information Science, Statistics or Informetrics.

### PhD Studentships

PhD studentships are available for all admitted PhD students. ([CityU Research Degree Programmes](#)) Candidates who demonstrate a strong record on excellent academic and research performances are encouraged to apply for the PhD Fellowship Scheme ([PhD Fellowship Scheme](#)).

Please send your CV to:

Dr. Tom WANG

Department of Library Science

6/F Academic Building I

University of Demo

Demo Avenue, Kowloon, Hong Kong

[tomwang@demo.edu.hk](mailto:tomwang@demo.edu.hk)

# 动态的可视化图像

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**RESEARCHER LOGIN**

**LU, Jian**

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- Centre for Advanced Structural Materials
- Department of Materials Science and Engineering

Focus on this Visit page

The graph is reduced to the latest content because there is too much data to show. Showing 40 out of more than 1119. Show more

Research Units  
Researchers  
External researcher(s)  
Author collaborations  
External Research Units  
Research Output  
Projects  
Activities  
Student Theses  
Funding  
Journal(s)  
Publisher(s)  
Prizes/Honours  
Press/Media

Floating Circle

Select different elements (e.g. researchers, research units, research output, projects, activities) to view the relations  
选择不同的数据种类，浏览它们的相关性

# 作者级计量信息

**Prof. LU Jian (呂堅)**

*Dip Ing, MSc, PhD (UTC), Habilitation (UPMC Paris 6), Fellow SEM, Fellow HKAES, Fellow HKIS, Academician: National Academy of Technologies of France*

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**Other Links**

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- [Publons Profile](#)
- [Technologies for Licensing](#)
- [COVID-19 Prediction](#)

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**Qualifications/Experiences**

**Educational Qualifications**

1993	Habilitation, Mechanics, UPMC (Université Pierre et Marie CURIE) (University of PARIS VI)
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**Prof. LU Jian**

**Scopus**  
Author ID : [55513401700](#)  
Document Count : 568  
Total Citations : 23594 by 14177 documents  
h-Index : 68  
Co-authors : 967 (maximum 150 co-authors can be displayed)  
Last Update : 2021-11-03 12:11:28

**Publons\***  
ResearcherID : [C-6044-2013](#)  
No. of Publications in Web of Science : [507](#)  
Total Citations : [20,611](#)  
h-Index : [63](#)  
Last Update : 2021-11-03 15:45:57

\* Please update your [Publons](#) account with all your Web of Science publications with related metrics visibility set to publicly viewable so that the latest bibliometrics will be reflected here. You may also refer to the [Publons Solution webpage](#) for further help.

**Google Scholar**  
Author ID : [c2AX9BoAAAAJ](#)  
Citations : 30667  
h-Index : 77  
i10-Index : 339  
Last Update : 2021-11-03 13:59:08

# 论文级计量信息

More on this researcher ...

Overview	Research Output	Projects	Activities	Prizes/Honours
Student Theses	Press/Media	Supervision	Patents (CityU)	

Search research output...

Filters

All CityU Non-CityU

1 - 20 out of 558 Sort by: Total citations (Scopus) |?

### Research Output

Effect of valence electron concentration on stability of fcc or bcc phase in high entropy alloys Guo, S., Ng, C., Lu, J. & Liu, C. T., 15 May 2011. In: Journal of Applied Physics. 109, 10, 103505.	Scopus citations 997 Check@CityULib
An investigation of surface nanocrystallization mechanism in Fe induced by surface mechanical attrition treatment Tao, N. R., Wang, Z. B., Tong, W. P., Sui, M. L., Lu, J. & Lu, K., 28 Oct 2002. In: Acta Materialia. 50, 18, p. 4603-4616	Scopus citations 907 Check@CityULib
Nanostructured surface layer on metallic materials induced by surface mechanical attrition treatment Lu, K. & Lu, J., Jul 2004. In: Materials Science and Engineering A. 375-377, 1-2 SPEC. ISS., p. 38-45	Scopus citations 905 Check@CityULib
High-entropy alloy: challenges and prospects Ye, Y. F., Wang, Q., Lu, J., Liu, C. T. & Yang, Y., Jul 2016. In: Materials Today. 19, 6, p. 349-362	Scopus citations 757 Open Access Attachment Check@CityULib
Surface nanocrystallization (SNC) of metallic materials-presentation of the concept behind a new approach LU, K. & LU, J., 1999. In: Journal of Materials Science and Technology. 15, 3, p. 193-197	Scopus citations 700 Check@CityULib
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



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## High-entropy alloy : challenges and prospects

Research output: Journal Publications and Reviews > Publication in refereed journal

Overview

Author(s)  
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J. Lu  
C.T. Liu  
Y. Yang

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Related Research Unit(s)  
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Centre for Advanced Structural Materials

Detail(s)

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Volume	19
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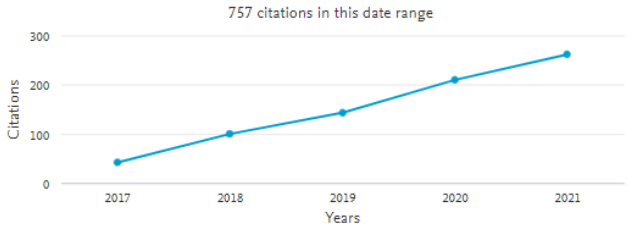
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
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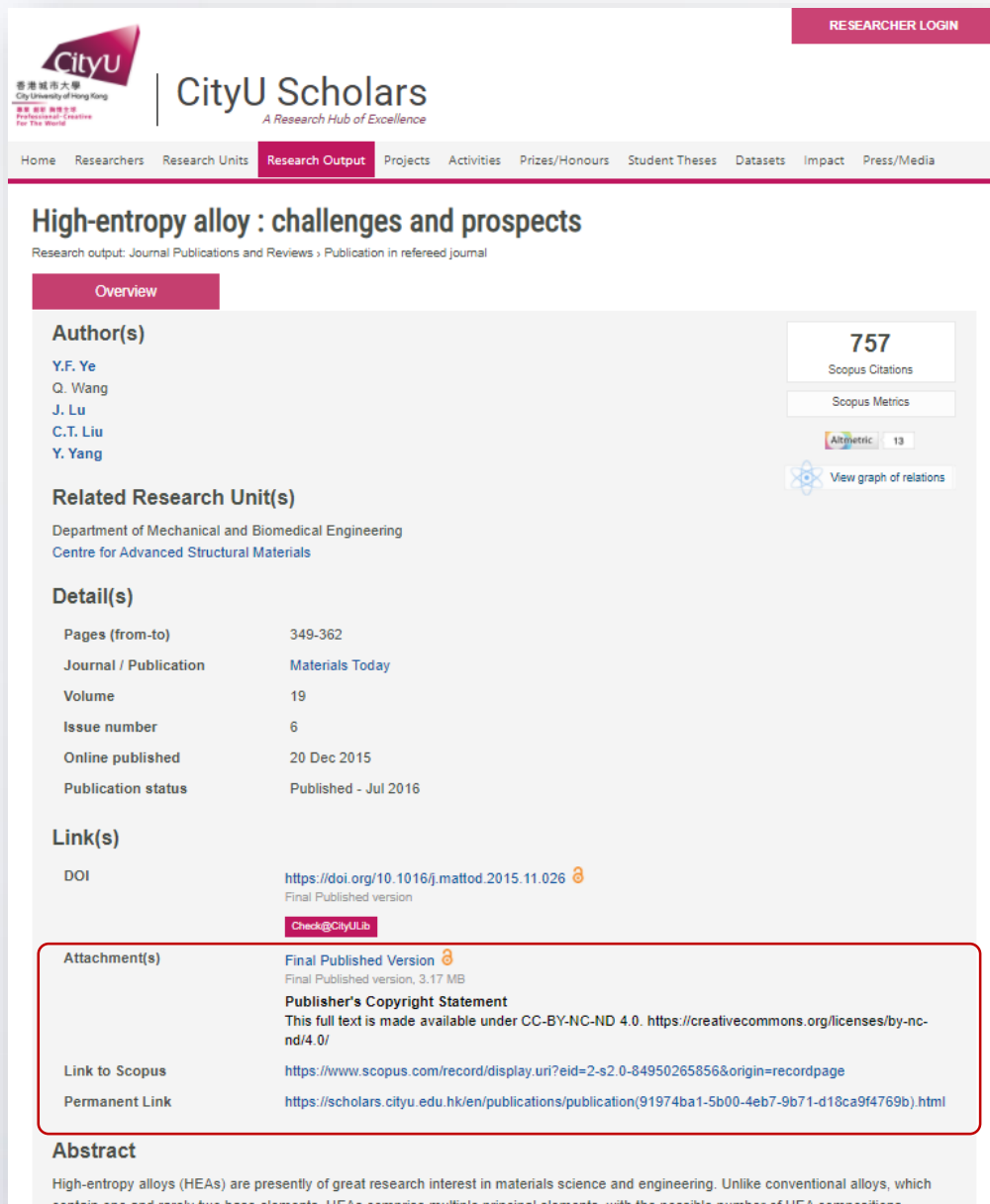
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**Introduction**  
From ancient times, human civilization has striven to develop new materials [1], discovering new metals and inventing new alloys that have played a pivotal role for more than thousands of years. Since the Bronze Age, alloys have traditionally been developed according to a 'base element' paradigm. This strategy begins with one and rarely two principal elements, such as iron in steels or nickel in superalloys, and a minor alloying approach is used to obtain alloys with enhanced properties. In sharp contrast, a novel paradigm for alloy design was proposed about a decade ago [2,3], which involves merely the mixing of multiple elements in an equimolar or near-equimolar composition to form alloys, thus excluding the 'base element' concept. These designed multicomponent alloys were termed as 'high-entropy alloys' (HEAs) by Yeh et al. [2], which suggests the high configurational entropy of the random mixing of elements in these alloys. Presently, HEAs are being increasingly studied [2,4-8]. Nevertheless, given the short history of research on HEA, the field is still in its infant stage in comparison to that of conventional alloys.

When designing alloys, researchers previously focused on the corners of a phase diagram to develop a conventional alloy, which occupy only a small portion of the design space, as illustrated by the inset of Fig. 1. However, with the advent of HEAs, the focus has been shifted to the central region. Conceptually, this is a radical departure from conventional theories [2,3,9], opening up new avenues of alloy design to be explored in depth. In principle, with the conventional 'base element' approach, only  $n$  types of alloys can be obtained using  $n$  different base elements. However, if any combination of  $n$  elements were to be selected from the total of  $n$  elements to form an equimolar alloy ( $p = 2, 3, \dots, n$ ), the total number,  $N$ , of possible alloys can be increased from  $n$  to  $N = 2^n - n - 1$ . When  $n$  is  $< 3$ , the strategies do not differ considerably; however, with increasing  $n$ , this difference can grow because of the exponential dependence of  $N$  on  $n$ . As shown in Fig. 1, one can obtain  $N \sim 10^6$  possible equimolar alloys for  $n = 20$ ; this number ( $N$ ) can even reach up to about one billion for  $n = 30$  in the literature [2]. Yet, defined HEAs as alloys containing at least five elements. Even if this convention were followed, the total number of possible HEA compositions remains considerably high, even increasing tremendously as about 75% of the 118-element

**High-entropy alloy: challenges and prospects**

**Y.F. Ye, Q. Wang, J. Lu, C.T. Liu and Y. Yang\***

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C.T. Liu  
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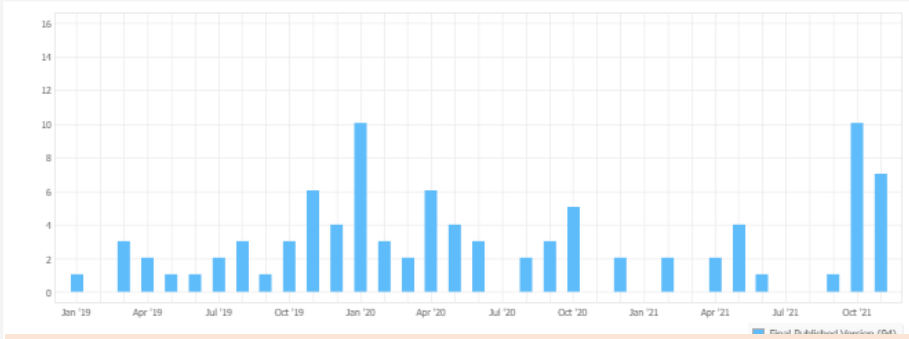
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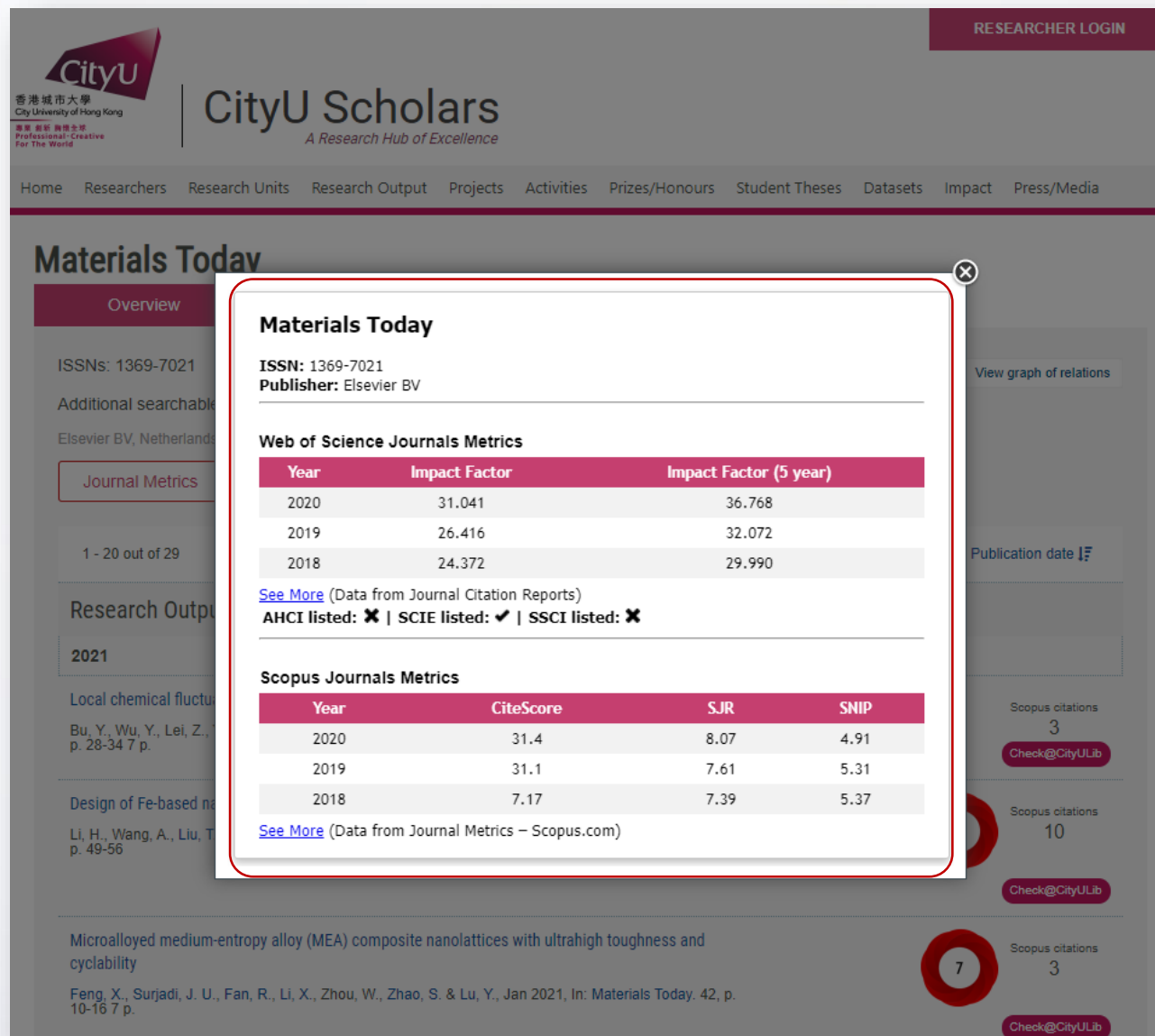


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Google search results for "High-entropy alloy: challenges and prospects". The search bar shows the query and the number of results (3,930). The results list several articles, with the top one from ScienceDirect highlighted. A red box highlights the CityU Scholars result at the bottom.

Google search results for "High-entropy alloy: challenges and prospects".

About 3,930 results (0.39 seconds)

Scholarly articles for "High-entropy alloy: challenges and prospects"

High-entropy alloy: challenges and prospects - Ye - Cited by 943

Science and technology in high-entropy alloys - Zhang - Cited by 351

Exploring the high entropy alloy concept in (AlTiVNiCr) ... - Yalamanchili - Cited by 27

https://www.sciencedirect.com › science › article › pii

High-entropy alloy: challenges and prospects - ScienceDirect

by YF Ye · 2016 · Cited by 940 — In spite of these challenges, the HEAs were found to have novel properties such as superb specific strength, excellent mechanical performance at high ...

https://www.researchgate.net › publication › 289991995\_...

High-entropy alloy: challenges and prospects - ResearchGate

PDF | High-entropy alloys (HEAs) are presently of great research interest in materials science and engineering. Unlike conventional alloys, which,

People also ask

- Why are high entropy alloys good?
- What is high entropy?
- What is a refractory high entropy alloy?
- What is an example of high entropy?

Feedback

https://www.semanticscholar.org › paper › High-entropy-...

High-entropy alloy: challenges and prospects - Semantic ...

High-entropy alloys (HEAs) are presently of great research interest in materials science and engineering. Unlike conventional alloys, which contain one and ...

https://scholars.cityu.edu.hk › publications

High-entropy alloy: challenges and prospects - CityU Scholars

by YF Ye · 2016 · Cited by 940 — High-entropy alloys (HEAs) are presently of great research interest in materials science and engineering. Unlike conventional alloys, which contain one...

https://scholars.cityu.edu.hk › files › High\_entrop... [PDF]

High-entropy alloy: challenges and prospects - CityU Scholars

by YF Ye · 2016 · Cited by 940 — Citing this paper. Please note that where the full-text provided on CityU Scholars is the Post-print version (also known as Accepted Author).

Google Scholar search results for "High-entropy alloy: challenges and prospects". The search bar shows the query and the number of results (7). The results list several articles, with the top one from Elsevier highlighted. A red box highlights the CityU Scholars result at the bottom.

Google Scholar search results for "High-entropy alloy: challenges and prospects".

Articles

Any time

- Since 2021
- Since 2020
- Since 2017
- Custom range...

Sort by relevance

Sort by date

[HTML] High-entropy alloy: challenges and prospects

YF Ye, Q Wang, J Lu, CT Liu, Y Yang - Materials Today, 2016 - Elsevier

High-entropy alloys (HEAs) are presently of great research interest in materials science and engineering. Unlike conventional alloys, which contain one and rarely two base elements, HEAs comprise multiple principal elements, with the possible number of HEA compositions extending considerably more than conventional alloys. With the advent of HEAs, fundamental issues that challenge the proposed theories, models, and methods for conventional alloys also emerge. Here, we provide a critical review of the recent studies ...

☆ 99 Cited by 943 Related articles All 7 versions Web of Science: 702

Google Scholar search results for "High-entropy alloy: challenges and prospects".

Articles

7 results (0.01 sec)

All versions

[HTML] High-entropy alloy: challenges and prospects

YF Ye, Q Wang, J Lu, CT Liu, Y Yang - Materials Today, 2016 - Elsevier

High-entropy alloys (HEAs) are presently of great research interest in materials science and engineering. Unlike conventional alloys, which contain one and rarely two base elements, HEAs comprise multiple principal elements, with the possible number of HEA compositions ...

☆ 99 Cited by 943 Related articles Web of Science: 702

High-entropy alloy: challenges and prospects

YF Ye, Q Wang, J Lu, CT Liu, Y Yang - Materials Today, 2016 - info...

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High-entropy alloy: challenges and prospects

YF Ye, Q Wang, J Lu, CT Liu, Y Yang - Materials Today, 2016 - scholars.cityu.edu.hk

High-entropy alloys (HEAs) are presently of great research interest in materials science and engineering. Unlike conventional alloys, which contain one and rarely two base elements, HEAs comprise multiple principal elements, with the possible number of HEA compositions ...

High-entropy alloy: challenges and prospects

YF Ye, Q Wang, J Lu, CT Liu, Y Yang - researchgate.net

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# Related Library Services

## 相关图书馆服务

# 1. 研究成果内容管理及作者资料维护

## Research Output Content Management and Researcher Information Maintenance



### Research Output

- Record harvesting
  - Various databases
- Record validation & enhancement
  - Adding in missing persistent identifiers (e.g. DOI) & external publication IDs (e.g. Scopus EID, WoS UID)
  - Author(s) mapping and sequencing
  - Verifying affiliation(s) at time of authorship
  - Adding in verified supplementary metadata gathered from full-texts, authors & other sources
  - Record de-duplication and merging
  - Record classification using RGC categories
  - Feedback to sources/publishers for data correction
- Record visibility setting
  - Public or backend



### 著作论文

- 从数据库中挖掘收集记录
  - 多元化的数据库
- 记录校验、优化 & 增强/补充
  - 添加唯一标识符 (DOI, Scopus EID, WoS UID)
  - 人名对应及排序
  - 验证作者机构
  - 参考全文、作者提供的信息及其他数据来源校验、补充元数据
  - 合并重复录入的论文记录
  - 校验/更改记录分类
  - 申请更改数据源的错误信息
- 设置记录可见度
  - 公开或后台可见

# 1. 研究成果内容管理及作者资料维护

## Research Output Content Management and Researcher Information Maintenance



### Researchers & Affiliations

- **Information Synchronization from HRO**
  - Person records for internal authors ready in system for mapping to different content types
  - Synchronized information: names & name variants, current & past departmental affiliation, current & past positions, contact information, etc.)
  - Name authority control throughout the system
- **Author IDs verification**
  - Verifying and adding in different author IDs (Scopus AIDs, Publons ResearcherID, ORCID, Google Scholar profile number)



### 学者 & 机构信息

- 从人力资源部同步导入资料
  - 学者信息可与不同数据匹配
  - 自动导入的姓名&常用名, 现时&过往的城大工作记录、职级、联络方式等
  - 权威控制的作者姓名
- 学者识别码
  - 校验和添加作者在不同系统的识别码 (Scopus作者ID, Publons作者ID, ORCID, 谷歌学者编号)



## 2. 研究影响力评估

### Research Impact Measurement, RIM

- Perform data analysis and tailor bibliometrics/benchmarking reports for the University, Academic Units and individual researchers for:
  - Government reporting 政府报告
  - Management decisions for internal KPIs, benchmarking, etc. 管理层关于KPI/标杆分析的决策
  - Personnel decisions for recruitment, promotion, tenure, etc. 招聘/晋升/任期的人事考量
  - Academic performance evaluation 学术成果评估
  - Award applications 奖项申请

#### CityU Scholars

Research output  
information of CityU  
researchers

#### SciVal / Scopus

**Scopus Data**  
SciVal Metrics  
Scopus Profile  
Refinement

#### InCites / WoS

**Web of Science Data**  
InCites Metrics

#### ESI

**Web of Science Data**  
Research Fronts  
Highly Cited Papers  
Hot Papers

### 3. 开放获取

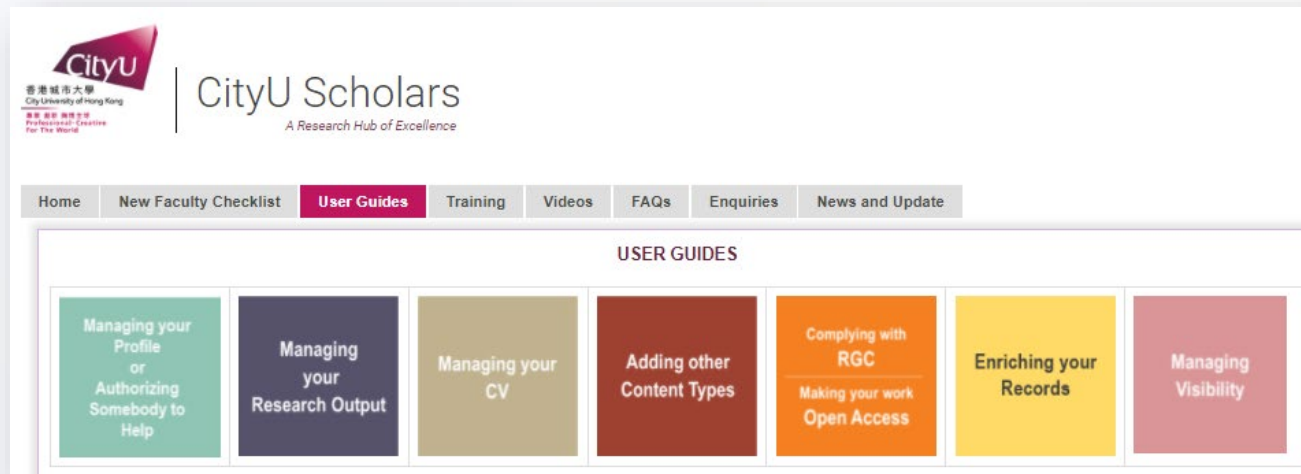
#### Open Access, OA

- Ensure the research information on CityU Scholars can be accessed by worldwide users 维护开放获取平台
- Flag OA indicators for publication records from record harvesting 标记OA论文
- Check & verify publisher's OA policies & embargo to fulfill the request of Research Grants Council (RGC) 校验OA政策
- Locate and upload the OA-compliant full-text to CityU Scholars for publication records 上载全文
- Attach publisher's copyright statement and license for use (if any) to publication records 附加版权/使用说明
- Work with publishers/organizations for OA agreement 签订OA协议



## 4. 用户培训 User Education

- User guides, videos, leaflets, etc. 用户指南/视频/宣传单张



- Annual training workshops 年度培训
- New staff orientation 新用户简介会
- Ad hoc consultations and seminars for specific research needs 咨询和讲座
- Functional email accounts for timely response to user enquiries 反馈用户查询

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从FAIR原则看CityU Scholars

CityU Scholars from the FAIR Perspectives

# The FAIR Principles (FAIR原则)

一套旨在克服数据发现与重用障碍的数据管理原则

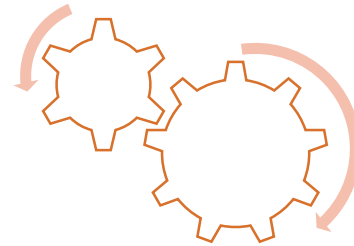
**F** 可发现  
Findable



**A** 可获取  
Accessible



**I** 可互操作  
Interoperable



**R** 可重用  
Reusable



- The term FAIR was first launched at a [Data FAIRPORT Lorentz workshop](#) in the Netherlands 2014.
- The resulting FAIR principles were [published](#) in 2016 in [Scientific Data](#) (Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3**, 160018 (2016). <https://doi.org/10.1038/sdata.2016.18>)
- The FAIR principles ‘living document’ is now hosted at [GO FAIR Initiative](#).
- **Extending FAIR principles for RDM into the wider domain of research information and CRIS.**
  - [FAIRNESS of Research Information, 14<sup>th</sup> International Conference on CRIS, 2018.](#)
  - [FAIRIO Workshops, 2020](#)



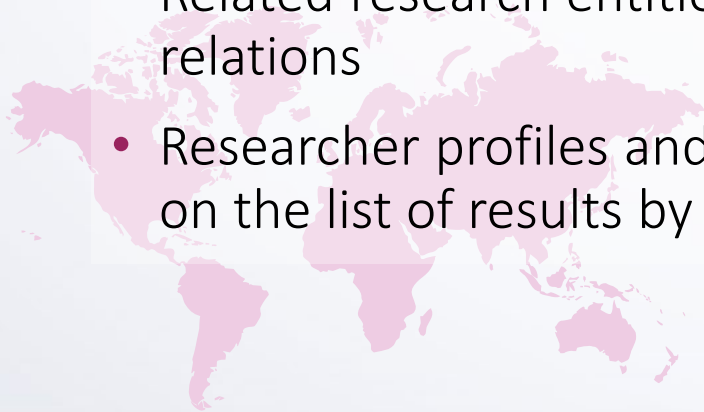
# The FAIR Principles (FAIR原则) – Key Points 重点

<p>可发现 Findable</p>	<p>The first step in (re)using data is to find them. Meta(data) should be easy to find for both humans and computers</p> <ul style="list-style-type: none"><li>→ <b>rich metadata</b> (丰富的元数据)</li><li>→ <b>persistent identifiers</b> (持久标识符)</li></ul>
<p>可获取 Accessible</p>	<p>Once the required data is found, users need to know how can they be accessed, possibly including authentication and authorisation</p> <ul style="list-style-type: none"><li>→ <b>a standardised, open, free and universally implementable communications protocol</b> (标准化的传输协议)</li><li>→ <b>authentication and authorisation procedure</b> (验证的手续)</li></ul>
<p>可互操作 Interoperable</p>	<p>The data usually need to be integrated with other data and interoperate with applications or workflows for analysis, storage, and processing.</p> <ul style="list-style-type: none"><li>→ <b>Sharable meta(data) in broadly applicable language and vocabularies</b> (词汇) <b>that follow FAIR principles.</b></li><li>→ <b>(Meta)data include qualified references to other (meta)data</b> (包括其他有参考性的元数据)</li></ul>
<p>可重用 Reusable</p>	<p>The ultimate goal of FAIR is to optimise the reuse of data. To achieve this, meta(data) should be well-described so that they can be replicated and/or combined</p> <ul style="list-style-type: none"><li>→ <b>Richly described (meta)data with a plurality of accurate</b> (准确) <b>and relevant attributes</b> (相关的屬性)</li><li>→ <b>(Meta)data are released with a clear and accessible data usage license</b> (使用授權的條件或協議)</li></ul>

Excerpted and paraphrased from <https://www.go-fair.org/fair-principles>. Please refer to the website for full version.

## 可发现原则在CityU Scholars上的应用

- Data synchronized from **reliable (可信)** institutional sources with **authority control (权威控制)**
- Research output records from different sources are validated and enhanced to ensure **accuracy (准确)** and **best coverage of different metadata attributes (全面丰富的数据)**
- Researcher profiles and entities on CityU Scholars are with **unique persistent identifiers (唯一永久标识符)**, supplemented by **proprietary external IDs and links (专有ID和链接)**
  - Authors: ORCID, author IDs (Scopus AID, Publon ResearcherID, Google Scholar, etc.)
  - Research Output: DOIs, Scopus EID, WoS UID, Patent no. etc.
- Related research entities can be **interlinked (关联)** for easy retrieval and establishing relations
- Researcher profiles and output records are **discoverable and highly ranked (高可见度)** on the list of results by global search engines (e.g. Google, Google Scholar)



## 可获取原则在CityU Scholars上的应用

- Research information on CityU Scholars is **openly accessible (开放获取)** to worldwide users
- **Full-text (全文)** of articles (published or postprint versions) deposited for open access
- **Authentication (认证)** is required for administrators/users to do data enhancement and validation
- APIs available for retrieval of records **by machines (机器可读)**
- Records **exportable in different formats (多样化的输出格式)**, e.g. Excel, RIS, BibTex, CERIF XML



## 可互操作原则在CityU Scholars上的应用

- Pure backend of CityU Scholars implements the Common European Research Information Format (CERIF) standard (通用欧洲科研信息格式) with a relational entity data model to ensure interoperability with different systems
- Records directly importable (导入) from external sources, e.g. Scopus, Mendeley, PubMed, Web of Science, arXiv.org, CrossRef
- Records exchange (交流) with internal systems, e.g. Central Knowledge Transfer Data Repository, RGC Reporting System, the electronic Annual Performance Report System (e-APR), the Executive Research Information System (ERIC), Research Assessment Exercise System (RAE), Research Degree Student Management System (RDSS)
- Integrated with ORCID (与ORCID整合) for seamless ORCID registration and synchronization of validated records to ORCID



## 可重用原则在CityU Scholars上的应用

- Prevailing citation formats (通用的论文格式标准) available to choose from for research output records
- Creative Commons license (知识共享许可协议) and copyright statement (版权说明) governs the re-use conditions
- A central registry of inter-related research information (中央注册的关联信息系统) with a plurality of accurate and relevant attributes (准确和关联的信息) to serve as a single source of truth (唯一信息源) to support re-use for different purposes:
  - Government Reports: Annual Reports to RGC, Research Assessment Exercise (RAE), KPIs for University Accountability Agreement Report, CDCF
  - Performance Assessment: Annual Performance Report for Faculty, Research Degree Planner
  - Benchmarking: Research Impact and benchmarking reports
  - Enhancing Visibility: Showcasing the whole spectrum of research achievements through for individual faculty and the University as a whole through the Portal

## CityU Scholars内容数量

Content Types (内容种类)	数量
Research Outputs 科研成果	>125,000
Research Activities 科研活动	>87,000
Prizes / Honours 奖项	>8,000
Projects 科研项目	>6,000
Student Theses 博士生论文	>5,900
Press / Media 媒体报导	>1,600

# 个案分享: 科研水平评估 2020

## Case Study: Research Assessment Exercise (RAE 2020)

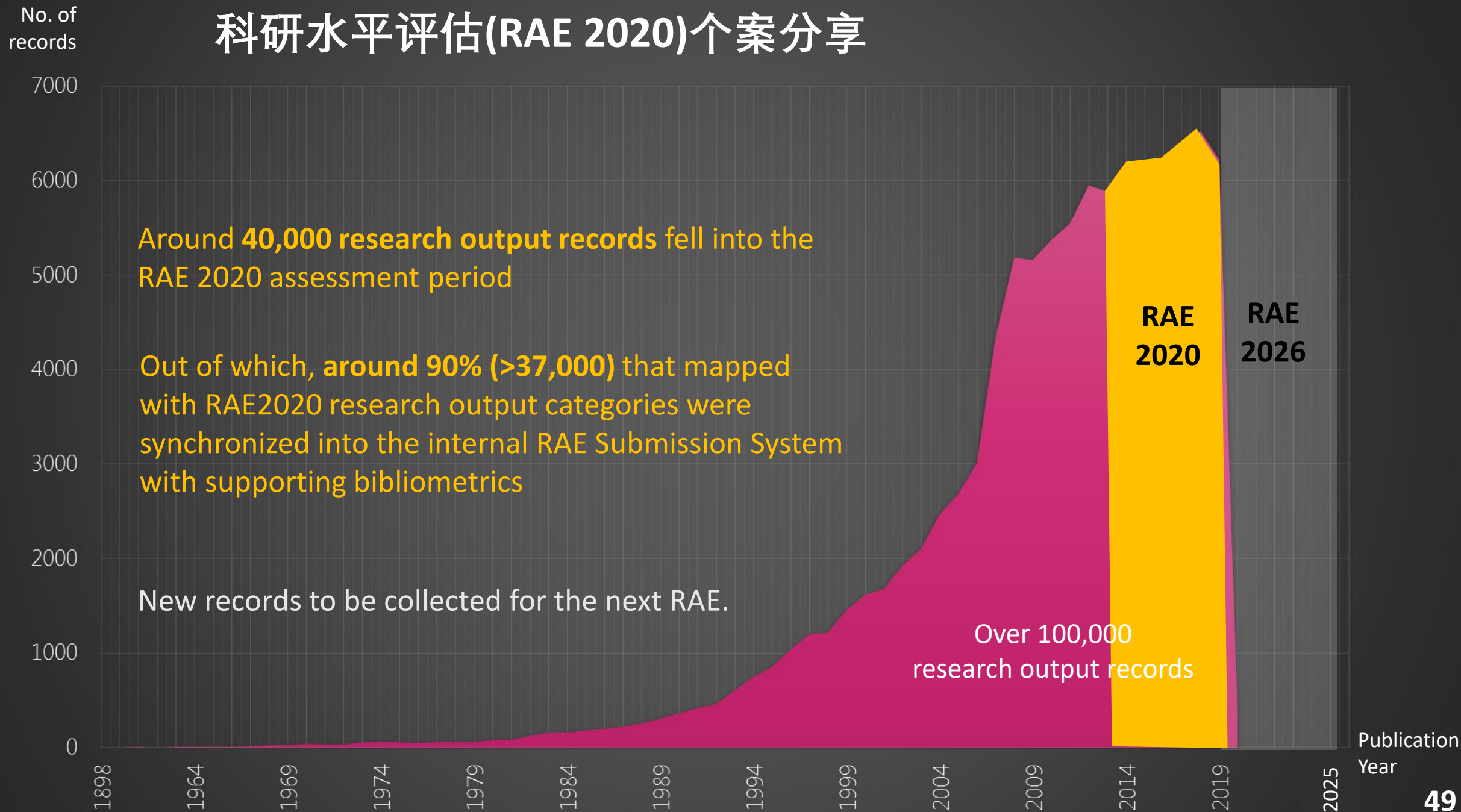
- Assessment by the University Grants Committee(UGC) [大学教育资助委员会, 简称教资会] every 6 years
- 4 best research outputs in the past 6 years from each eligible researcher to be submitted
- Requires outputs to be submitted with complete metadata for cross-checking and full-texts for inspection and be classified in UGC categories

### Challenges:

- Need to gather all outputs in the past 6 years for selection by researchers with supporting bibliometrics
- UGC's requirements on metadata completeness and accuracy as well as output classification
- Control on duplicate submission by co-authors
- Seamless data flow between CityU Scholars and the internal RAE Submission system

The fact the CityU Scholars Pure System and its collected metadata being FAIR has been a great help.

# 科研水平评估(RAE 2020)个案分享



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用戶交流 & 參與

Communication & Involvement



# 支援网络 (Supporting Network)

## 内容管理

图书馆

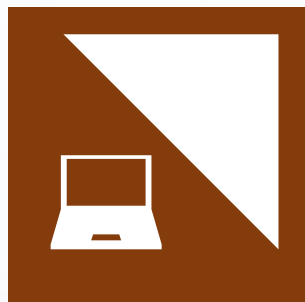
- Regular research output harvesting, validation & enhancement
  - Support for Open Access
- Support for ORCID integration & Scopus Profile Refinement
  - Support for data analysis & report generation



## 系统维护

IT部

- Regular upgrade & system health check
  - Regular data interfacing
  - User administration



## 用户支援

图书馆

IT部

研究基金与合同部

- User enquiries
- User training & guide
- Support for RAE and other government reporting

## 行政支援

获授权的代理人(Trusted User)

院系指定人员(Departmental Administrator)

- TU authorized by researchers & DA authorized by Head of Department
- Profile and record management for authorized researchers or departments
- Data verification
- Channel enquiries/comments to other supporting units

# 用户参与 (User Engagement)

## Researcher

- Monitor publication list
- Track citation changes
- Populate research achievement of different types
- Keep researcher profile up-to-date

## Designated personnel

- More aware of roles & responsibilities
- Provide user support in a proactive way

## Faculty & Department

- More inter-dept communication & collaboration
- Provide user support in a systematic way with streamlined workflow

## University

- Have a holistic view of CityU's research excellence with data, metrics, relations, visualization all in one place
- Perform high-level assessment & benchmarking, reputation management, promotion, decision making & strategic planning with ease



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展望

Way Ahead

# The New Open Access Plan of the Research Grants Council (RGC)

## 研究资助局新推出的Open Access 计划

### CityU Scholars

#### 图书馆对应新Open Access计划第一阶段的支援

为日后提供OA相关统计数字作准备 → 需要收集更多与OA有关的metadata (元数据)

- Article Processing Charges (APCs) [文章处理费] and institution(s) that paid
- RGC-funded project information for publications concerned
- OA colour (Gold versus Green) for records
- Copyright ownership [版权拥有权] information
- Corresponding author [通讯作者] indicator
- Transformative agreement [转型化合约] information

**RGC Publication Gateway** → 为RGC提供旧项目产出的著作的元数据及补充OA资料

**研究数据管理培训** → 提升内部人员相关技能和知识，计划对学者的支援服务和相关系统要求，准备迎接第二阶段研究资助局对数据管理计划的要求

Research Grants Council (RGC) 研究资助局的Open Access 计划

<https://www.ugc.edu.hk/doc/eng/ugc/publication/report/report20210106/report20210106.pdf>

# 研究数据管理 (Research Data Management)





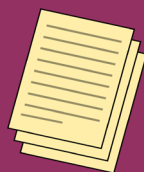
# 数据管理的好处 (Benefits of Research Data Management)

## Funders 拨款机构



- Meet grant requirements 满足拨款条件
- A more competitive grant application 增加拨款申请的竞争力

## Publishers 出版商



- Comply with journal data policy 满足期刊对研究数据政策要求
- Support data publishing 支持数据出版

## Collaborate 方便协作



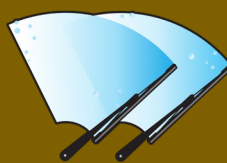
- Secure data workspace 需要安全的数据工作间
- Share data with internal & external collaborators with higher efficiency 跟伙伴有效率地分享数据

## Archive 存档



- Long term preservation of research data after research with better organization and access control 研究完毕后, 整理及长久保存数据, 并管理提取

## Visibility 可见度



- Data can be found and cited (with DOI) 数据有DOI, 方便发现和引用
- Open up collaborative opportunities 带来更多合作机会

## Re-use 重用



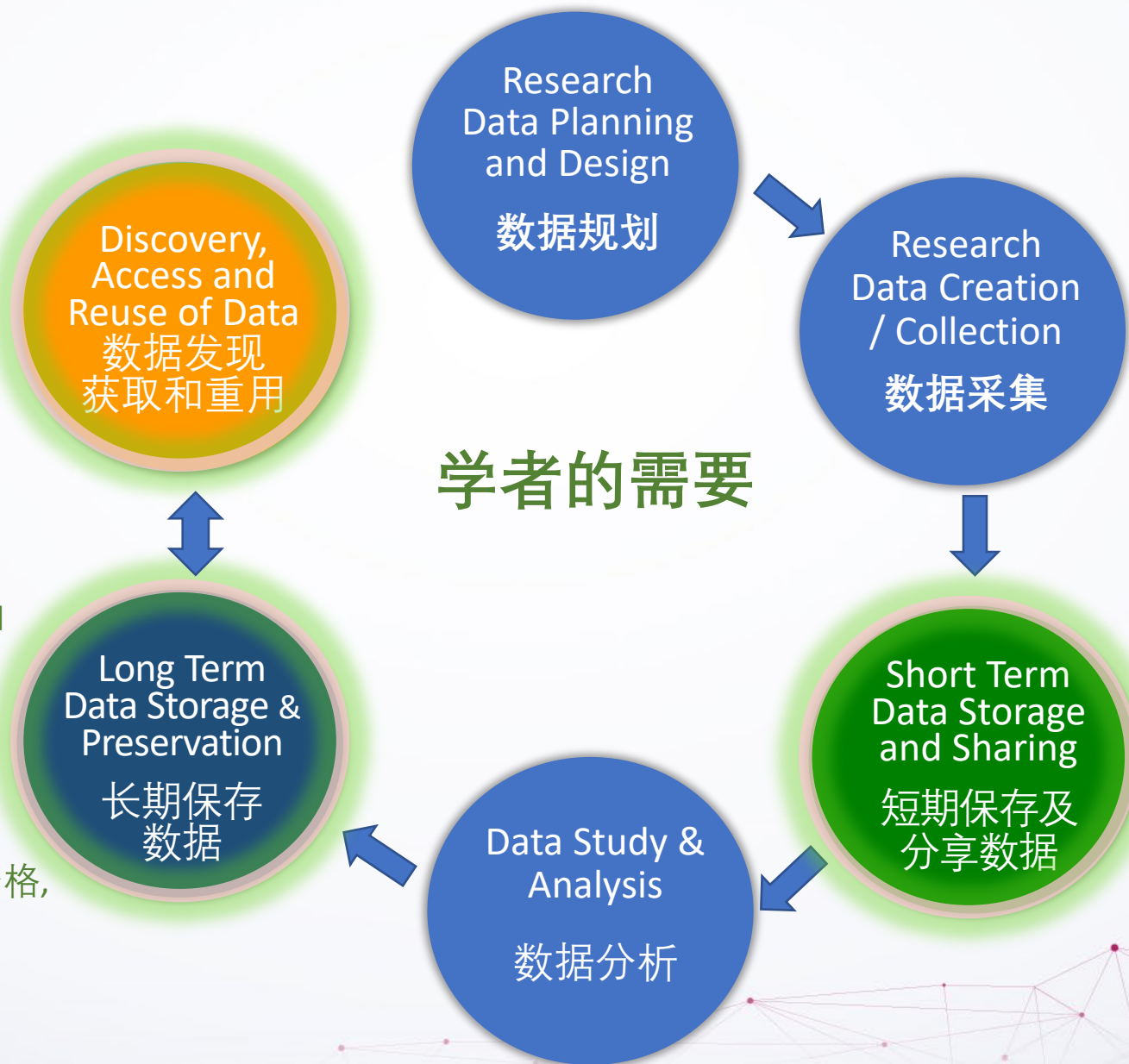
- Facilitate re-use to increase impact of university and researchers 促进数据重用, 提升学者和大学的研究影响力
- Keep track of usage statistics 计算使用量

# 计划服务模式 (Planning Service Model)

要有管理机制, 系统及平台处理研究数据集 (datasets) 的检索, 并按拨款机构 (funding bodies) 的要求或项目的性质, 开放, 限制或延后数据的获取和重用?

需要一个安全可靠的机构数据档案库 (institutional data repository) 来长期保存数据集 (datasets) 和相关的管理计划文件 (data management plan)?

机构数据档案库要有政策 (policies) 规管使用者资格, 数据保存期及保存量等吗?



需要一个短期的暂存数据工作间 (working space) 来跟研究团队分享数据, 方便合作?

# CityU Scholars 作为机构数据档案库 ？

## CityU Scholars as an Institutional Data Repository?

- Data Repositories 的一些基本要求：
  - 支援学者对研究数据的协作性更新 (collaborative editing of datasets)
  - 分配DOI功能
  - 研究数据档案版本管理 (File versioning)
  - 储存空间 (Storage)
- CityU Scholars 现时收集的研究数据集记录不多
  - 大部分都储存在校外的其他数据档案库里 (e.g. FigShare, NIH Repository, etc.)
  - 只有 metadata (元数据) 和相关数据档案库的连接 (links)
- 理想是一个能够在metadata 的层面跟 CityU Scholars无缝互通的数据档案库
  - Datasets 相关的元数据也可以自动汇入 CityU Scholars 里
  - Datasets 的信息可以跟在研信息系统里其他相关联的研究信息扣在一起，在CityU Scholars 里整体的收集起来

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谢谢各位