

オープンサイエンス、データ共有に関する国際科学政策の動向報告

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G7科学大臣会合オープンサイエンスWG (G7OSWG)報告

- G7国政府は、オープンサイエンス (OS)、データ共有の推進に合意。
- 科学者のOS活動・業務を評価し、動機付け強化を重要と認識
- グローバルな科学データ整備・利活用基盤の重要性を認識。



G8 2013 Science Ministers Meeting (UK)

G8 Science Ministers Statement London

Introduction

3. Open Scientific Research Data

We
of o

Open enquiry is at the heart of scientific endeavour, has profound implications for the way that science is communicated. It can provide society with the new challenges. We are committed to openness in science.



G7 2016 Science Ministers Meeting (Japan)



Photos by Cabinet Office of Japan, Ibaragi Prefectural Government, and Tsukuba City Government, 2016

- “Open Science” was one of six themes
- Created a **G7 Open Science Working Group** (co-chaired by EU & JP).

It's me



G7 2017 Science Ministers Meeting (Italy)

- The expert report of the Open Science WG was accepted.
- Focusing on **rewards/incentives (w/research career)** and **data infrastructure**.
- Agreed to continue OS-WG.

G7 2018 Science Ministers Sherpa Meeting (Canada)

- The Open Science follow-up survey was preliminarily reported.
- The final report is to be at G7 2019.
- Further action of OS is to be discussed.

オープンサイエンスに関する内閣府の動き

- 第5期科学技術基本計画

- 報告書「我が国におけるオープンサイエンス推進のあり方について～サイエンスの新たな飛躍の時代の幕開け～」(2015.3.30)

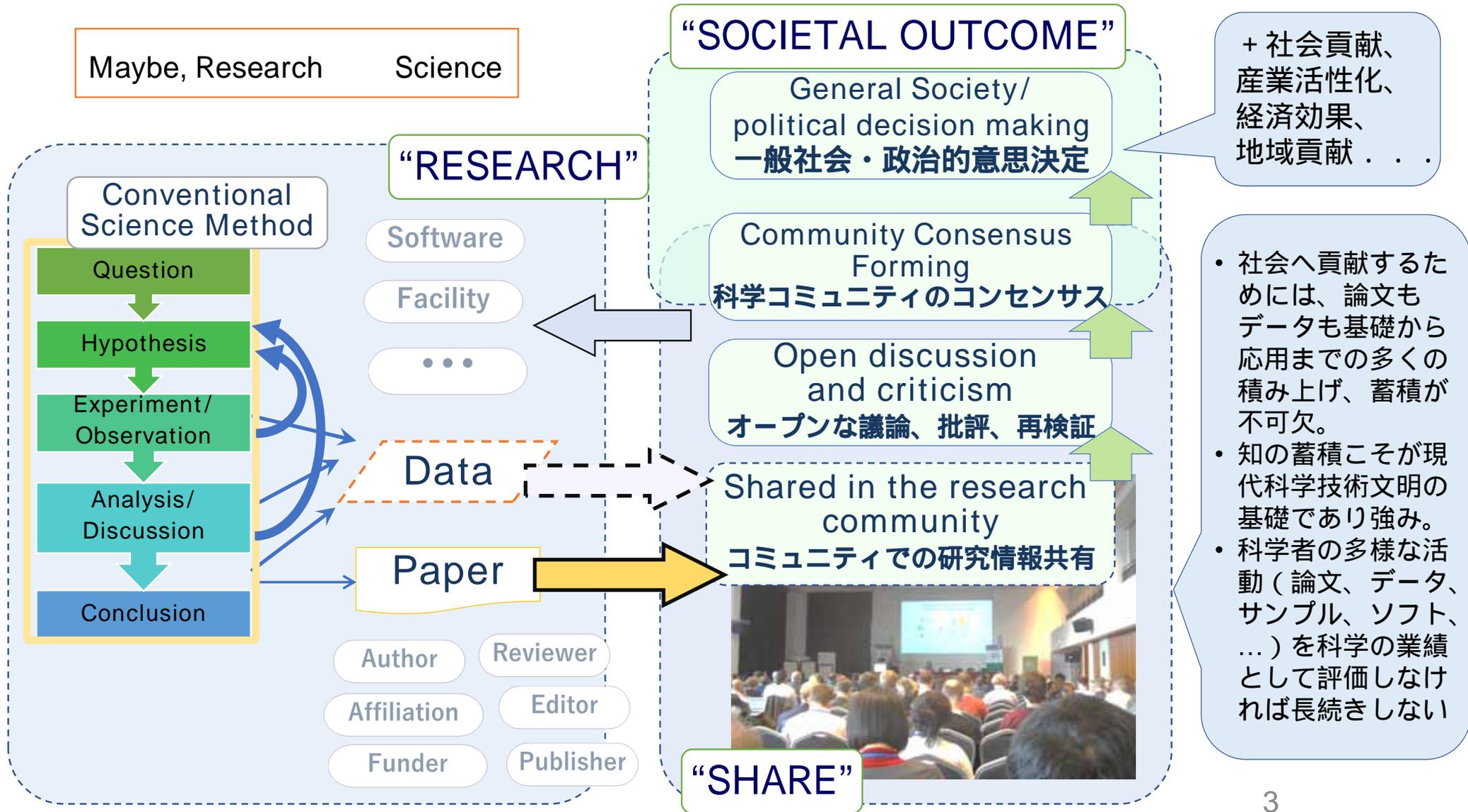
- 統合イノベーション戦略(2018年)

- 国立研究開発法人におけるデータポリシーの策定のためのガイドライン(2018年6月)
- 国際認証基準等に基づくリポジトリの整備・運用のガイドライン(2018年3月公表)



データリポジトリ信頼性の
国際認証

Science as a Global Social System



AGU、EGUのアクティビティ事例

- AGU Earth & Space Science Informatics (ESSI) Section



- AGU Fall Meeting 情報学セッション:セッション提案61 (2018)、実績35程度?(2016、2017)

- EGU Earth & Space Science Informatics (ESSI) Division

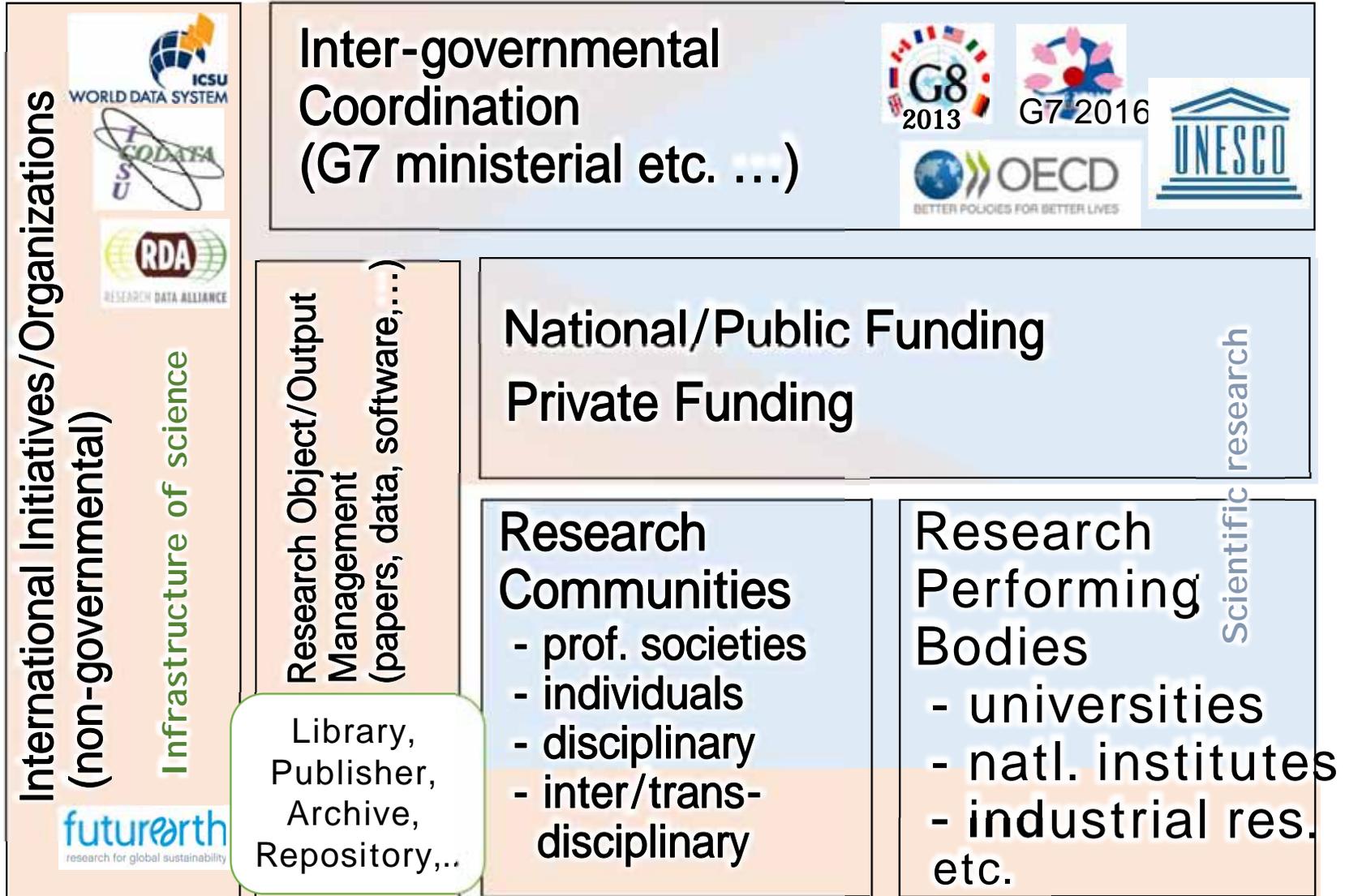


- EGU General Assembly 2017 情報学カテゴリ:22

- JpGU-AGU meeting 2018にて:「JpGUでも情報・データに関するコミュニティをつくるべき」(AGU Board Dr. Kerstin Lehnert 他)

- 欧米では、科学データを分野としてどう取り扱い評価するか、学協会で科学者が論文として発表している。
- 日本では、科学研究をどう進めるかといった「メタ研究」の調査や考察が、研究者の業績とみなされにくいのではないか。

Toward Global Framework for Science Ecosystem



San Francisco Declaration of Research Assessment

多様な科学研究活動のアウトプット(論文、データ、ソフトウェア、試料、etc.)が成果として認められるべき

- Promotes value of all scholarly outputs

- Journal articles
- Preprints
- Datasets
- Software
- Protocols
- Research materials
- Well-trained researchers
- Societal outcomes and policy changes

- Focuses on the merits of the work

- Reduces JIF-chasing
- Facilitates Open Science practices
- Improves rigor and reproducibility
- Enhances collaboration

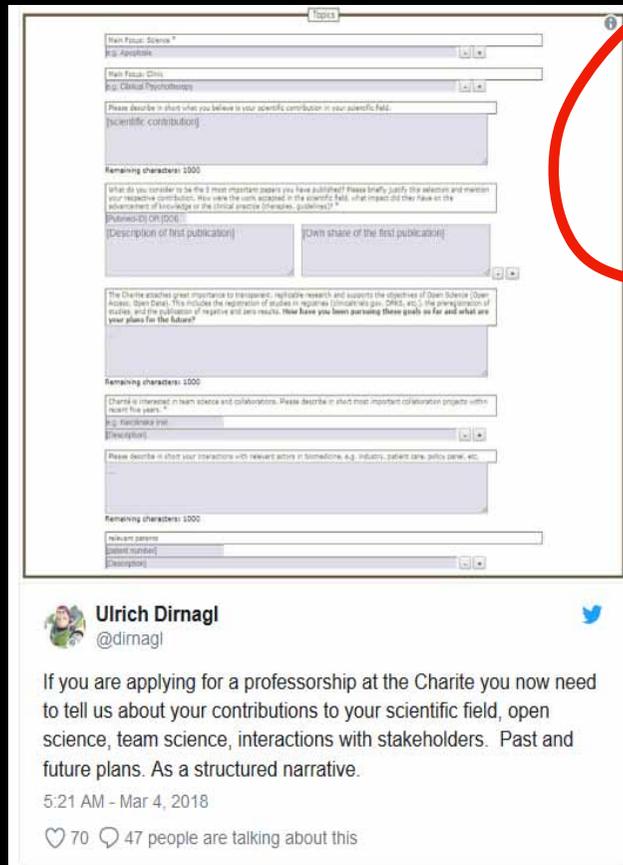


Change is happening: Research Institutes



UT Southwestern Medical Center
Dallas, Texas

Candidates receive questions before Skype interviews, so they have time to reflect. The goal is to identify thoughtful individuals, in addition to candidates who process information quickly.



Charité University Hospital
Berlin, Germany

Application includes:

- Contribution to research field
- Open Science
- Team Science
- Interactions with stakeholders

Staff member sits on hiring deliberation meetings as a neutral party to promote balanced discussions

より多様な研究評価、研究者評価へむけた実践事例 (1)

独Charite Univ. Hospital :
研究職応募書類の業績に「オープンサイエンスの活動」記述欄を設けている



Change is happening: Funders

How we judge research outputs when making funding decisions

f t in e

Published: 8 August 2018

Open access

Robert Kiley, Head of Open Research, and Jim Smith, Director of Science, discuss the steps Wellcome is taking to fulfil the principles of the San Francisco Declaration on Research Assessment (DORA).

When we published our [open access policy](#) over a decade ago, we made it clear that what counts when we make funding decisions is the intrinsic merit of the work and not the journal or publisher.



Credit: Science Photo Library
A researcher's skills, qualities and attitudes can never be expressed in a single metric.

Wellcome
London, United Kingdom

Application includes:

- List of research outputs
- Contributions to mentorship
- Output sharing plan to advance potential health benefits
- Plans for public engagement

Guidance provided to advisory panel members

Wellcome Trust Web site (2018)

- Improvements to our grant application and decision process
- “We’ve modified our **grant application forms** so that now we ask researchers for their outputs, which may include (but are not limited to) **preprints, datasets, software, research materials and inventions, patents and other commercial activities**. Previously, we just asked researchers to cite their research publications.”

<https://wellcome.ac.uk/news/how-we-judge-research-outputs-when-making-funding-decisions>
Red letters are by Murayama

http://sfdora.org/wp-content/uploads/2018/10/18-1016-DORA-slides_short-presentation_FINAL.pptx



より多様な研究評価、研究者評価へむけた実践事例(2)

英Wellcome Trust (研究資金配分機関):

- 研究費申請書類)の業績欄に多様な研究成果(論文、データ、コード、特許...)を記載できる。など。

GDS (Greater Data Science)

[David Donoho (2017) 50 Years of Data Science, *J. Comput. Graph. Stat.*, 26:4, 745-766, doi:10.1080/10618600.2017.1384734]

1. *Data Gathering, Preparation, and Exploration*
データ収集、データ整備、データチェック
2. *Data Representation and Transformation*
データ・DBの形式整備、再構成
3. *Computing with Data*
データ処理
4. *Data Modeling*
データ生成・予測のモデル(?)
5. *Data Visualization and Presentation*
データの可視化(通常 of データ描画 ~ 高度化)
6. *Science about Data Science*
データサイエンスに関するサイエンス



<https://profiles.stanford.edu/david-donoho>

David Donoho
(Dept. Statistics of
Princeton University,
winner of von Neumann
Prize, Gauss Prize, and
fellow of American
Mathematical Soc.)

より多様で広範な
「データサイエンス」
へ向けた「データサ
イエンティスト」から
の提案