

# HOW OPEN SCIENCE INFLUENCES NEXT DEVELOPMENTS IN GREY LITERATURE

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21<sup>st</sup> International Conference  
on Grey Literature  
Hannover, Germany

22 October 2019

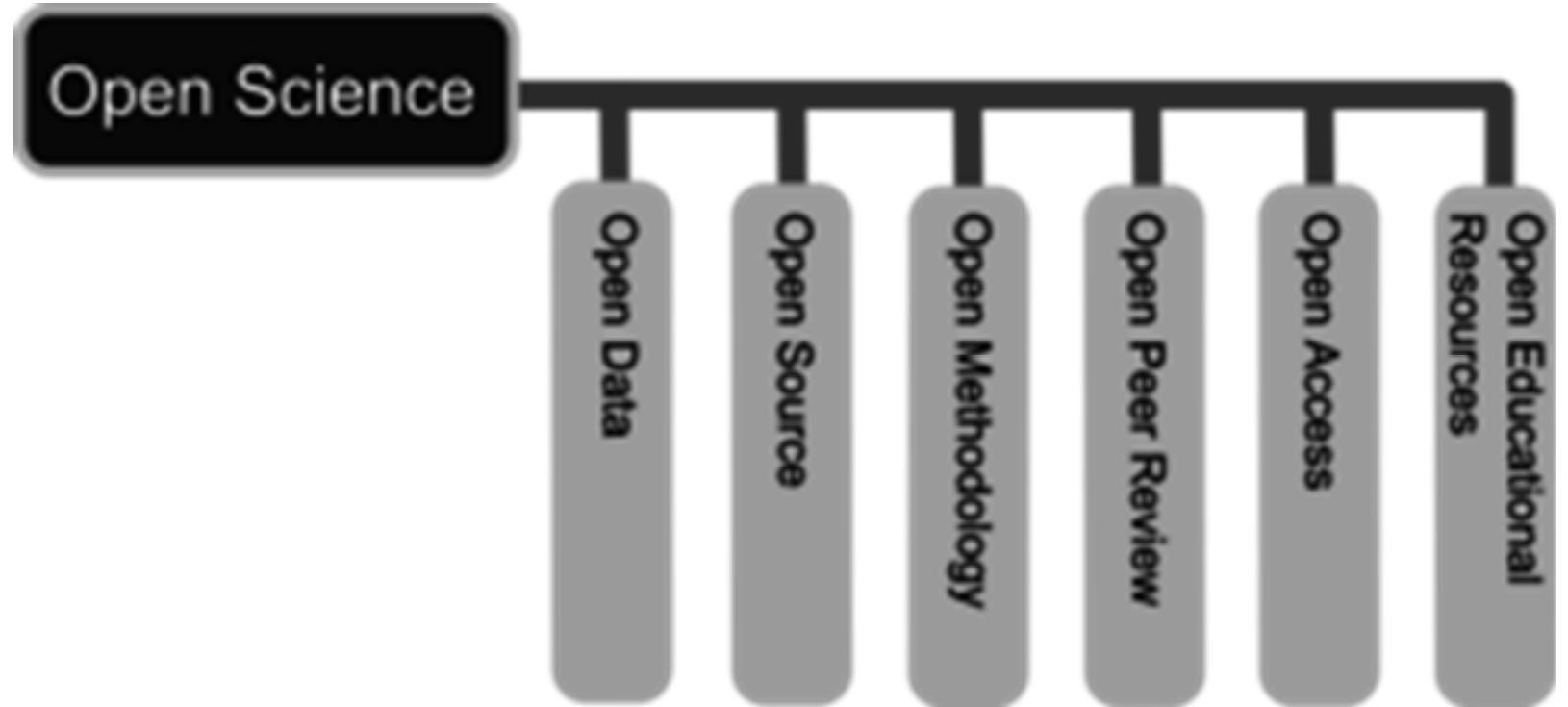
**Julia Gelfand**

**University of California, Irvine**

**Anthony (Tony) Lin**

**Irvine Valley College**

SIX  
PRINCIPLES  
OF OPEN  
SCIENCE:  
OUTLINE OF  
HOW GL IS  
CHANGING



- <http://openscienceasap.org/open-science/>

# OPEN SCIENCE CULTURE

Philanthropic

Reflationary

Constructivistic

Explorative



# IMPACTS ON GREY LITERATURE



**Not all science is performed in large research enterprises**



**Entrepreneurial spirit is widespread among faculty/students/researchers**



**Advancing practices in healthcare, environmental crisis, and social wellbeing**



**Major philanthropists contributing to Open Science**



LESS WILL BE GREY



SCOPE OF GREY LITERATURE WILL EXPAND



INTERDISCIPLINARY WILL CONTINUE TO BLEND  
SYSTEMS BIOLOGY  
GENOMICS, IPiGENOMICS,  
PHENOMICS, PROTEOMICS



TRANSPARENCY WILL BE A CENTRAL ISSUE  
CITIZEN SCIENCE,  
COLLABORATION,  
CROWDSOURCING



INTERNET OF THINGS (IOT)  
IOT, ALEXA, GPS/GIS,  
POLYMATH PROJECT, PZQ



# PHILANTHROPIC PARTNERS

Chan  
Zuckerberg  
Initiative 

## Essential Open Source Software for Science

The Chan Zuckerberg Initiative is inviting applications for open source software projects that are essential to biomedical research. Applicants can request funding between \$50k and \$250k for one year. This RFA is the first of a series. CZI will invite applications during three distinct cycles, with rounds beginning June 18, 2019; mid-December 2019; and mid-June 2020. [Read our Medium post](#) to learn more.

ResearchGate

1/1



**ALLEN INSTITUTE FAST FACTS** 500+ EMPLOYEES AND GROWING

FINANCED BY **PAUL G. ALLEN**

EST. 2003 | SEATTLE HQ BUILT IN 2015 | SALMON DART BUILDING | CERTIFIED LEED-GOLD

64 **PIECES OF ART** (including the "M&P" sculpture by Fritz Koenig)

134 **MICROSCOPES**

OUR SCIENTIFIC DIVISIONS:

- ALLEN INSTITUTE - BRAIN SCIENCE
- ALLEN INSTITUTE - CELL SCIENCE
- ALLEN INSTITUTE - IMMUNOLOGY
- THE PAUL G. ALLEN FELLOWSHIP GROUP

NUMBER 1 R&D-INTENSIVE ORGANIZATION IN ALL OF SEATTLE

**BIG DATA** 8 PATENTED PLATFORMS

**KNOWN FOR**

- Allen Brain Atlas
- Allen Cell Explorer
- Allen Cell Explorer
- Allen Brain Observatory
- Allen Cell Types Database

**OPEN SCIENCE**  
History of our resources available to the global community to accelerate discovery

**BIG SCIENCE**  
Testing hypotheses, enhancing projects that yield rich, robust data and new knowledge

**TEAM SCIENCE**  
Enhancing a collaborative approach across all divisions, where unique perspectives and diverse experiences contribute to solving the world's challenges in life

alleninstitute.org

  
**RESNICK INSTITUTE**  
science - energy - sustainability

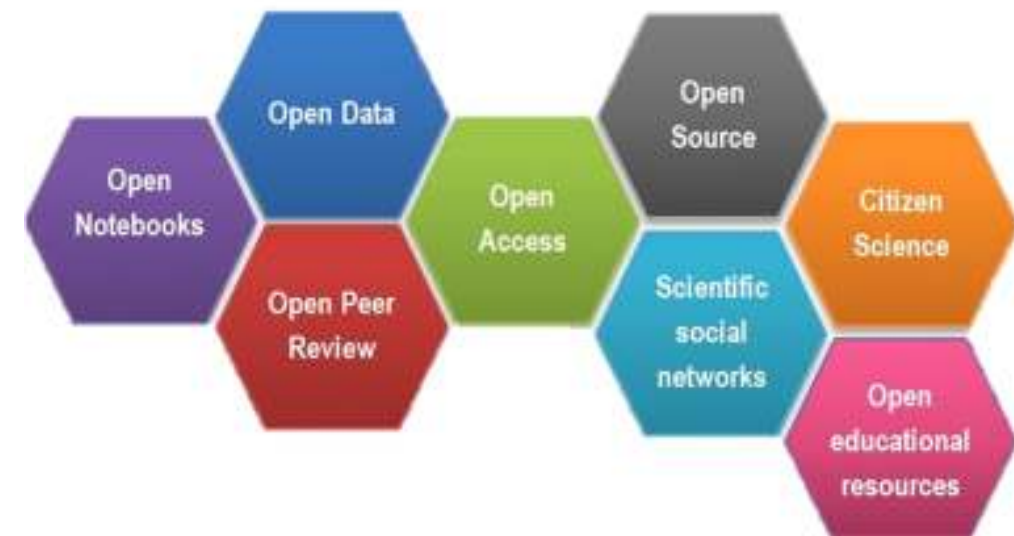
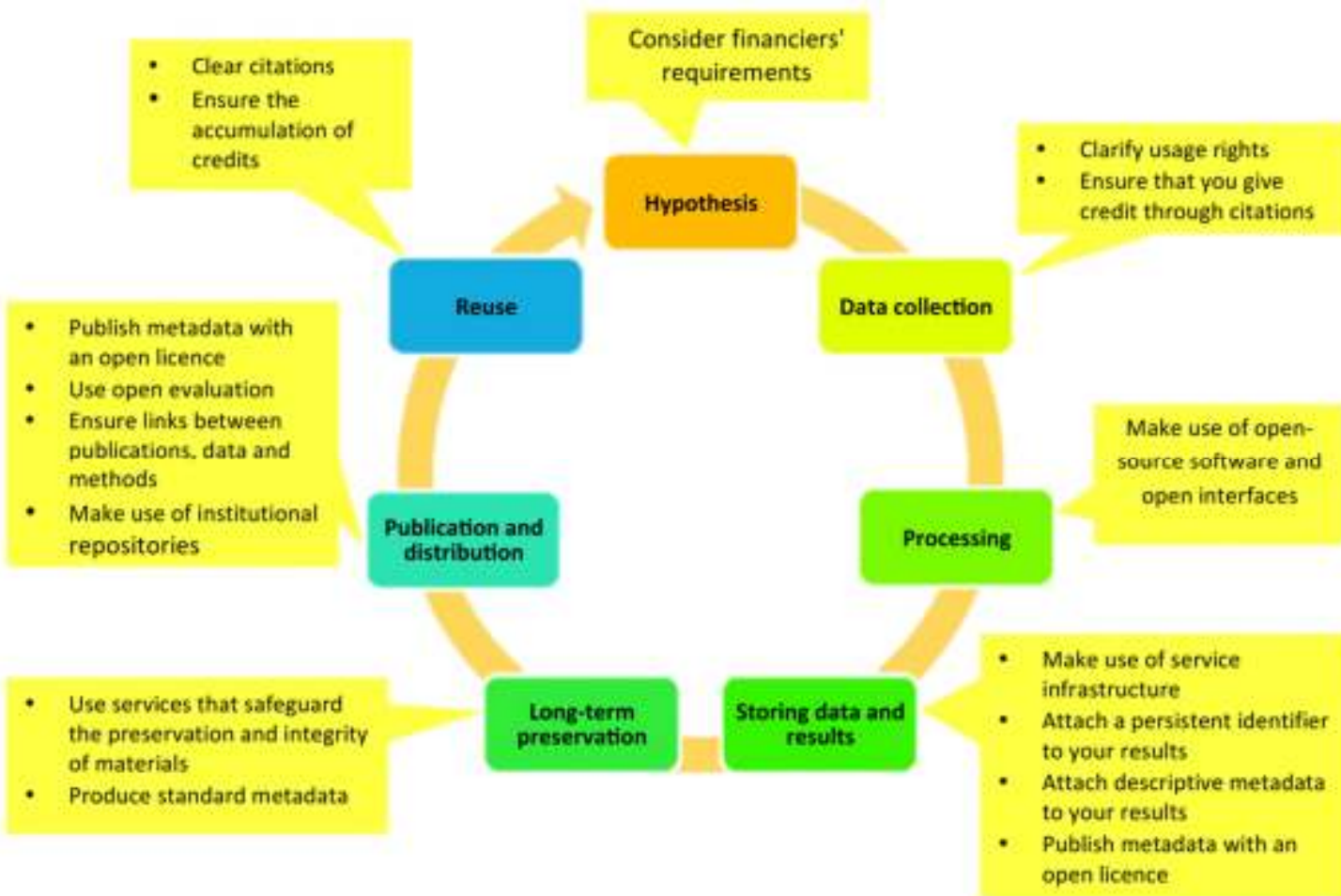
**BILL & MELINDA GATES foundation**

# RESPONSIBILITIES OF “OPENNESS”

- Scholarly communication
- Repurposing content
- Data management
- Rights management
- Quality & process of peer review
- Conservation & stewardship
- Honors government & funding mandates
- Contributing to future social good
- Creates new publishing ecosystem that incorporates GL

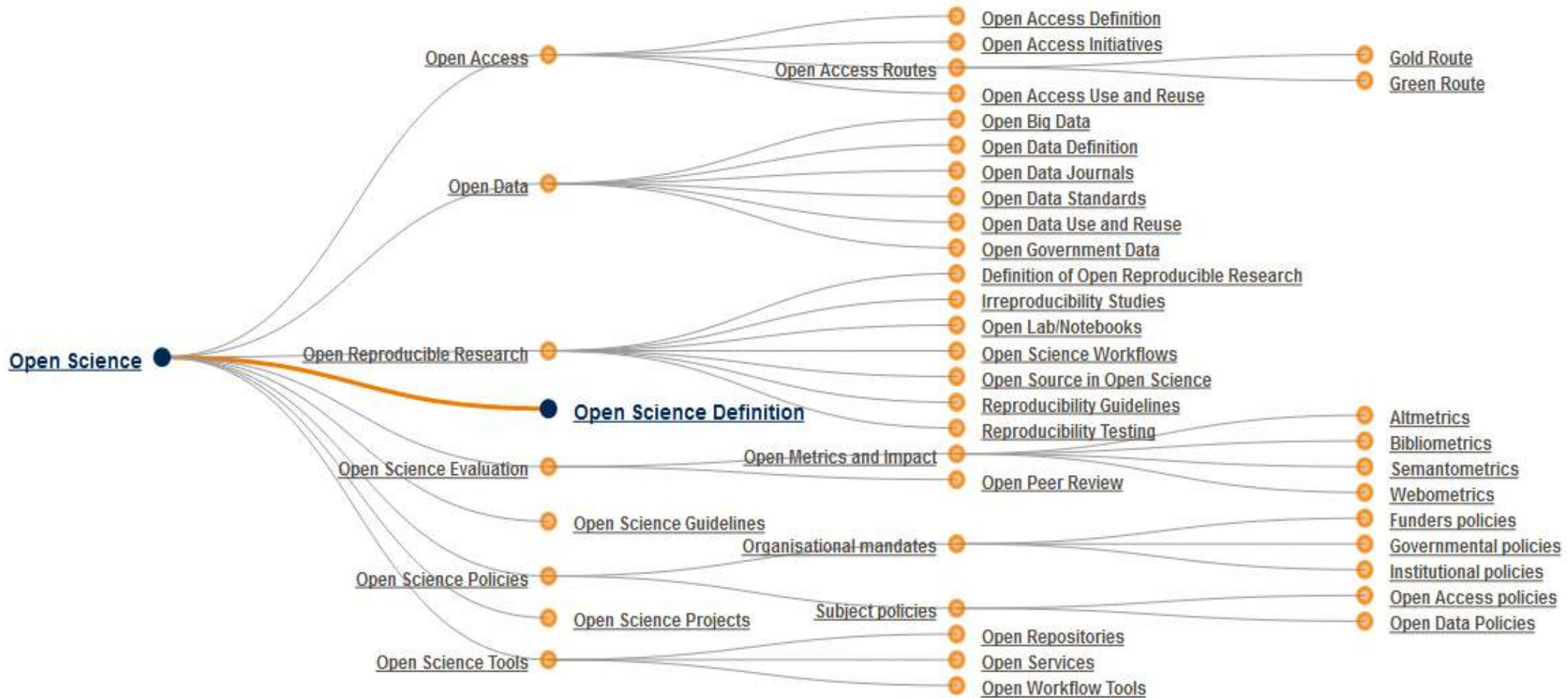


# UNDERSTANDING OPEN SCIENCE

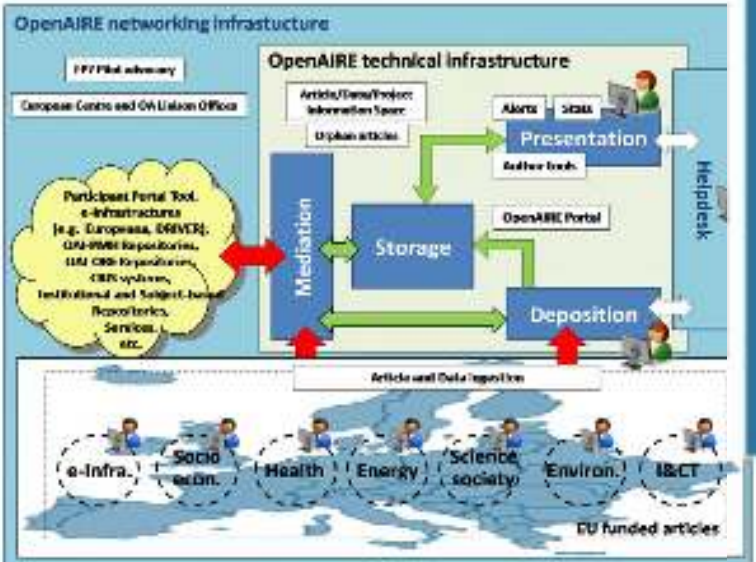
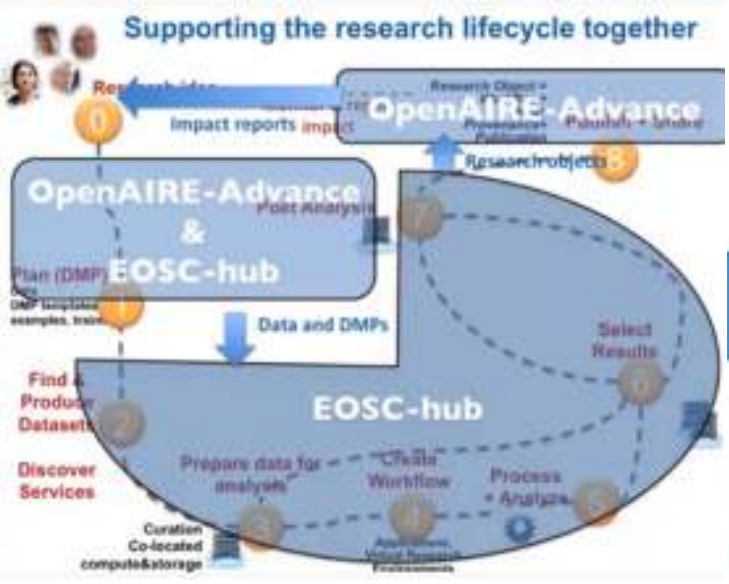




# FOSTER TAXONOMY OF OPEN ... SCIENCE



# EOSC & OpenAIRE

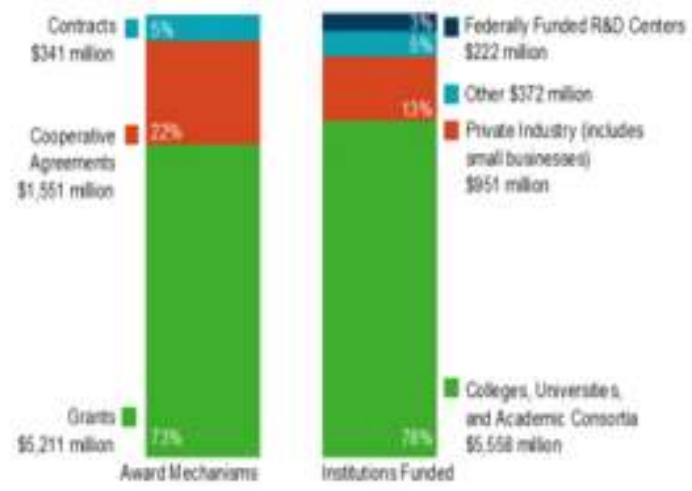


<b>Architecture</b>	Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.
<b>Data</b>	FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.
<b>Services</b>	Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.
<b>Access &amp; Interface</b>	Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.
<b>Rules</b>	Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.
<b>Governance</b>	Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.



Open Science in the US

**NSF Award Mechanisms and Institutions Funded**  
 FY 2017 Obligations for Research and Education Programs  
 (\$7,103 million)



Notes: NSF Research and Education Programs include--Research & Related Activities, Education & Human Resources, and Major Research Equipment & Facilities Construction appropriations.  
 Other institutions funded include federal, state, and local governments, nonprofit organizations, and international organizations.  
 R&D = Research and Development.  
 Totals may not add due to rounding.

TOO  
 MANY  
 OPTIONS,  
 NOT  
 ENOUGH \$



# CONCLUSION

## SONG OF OPEN SCIENCE WILL HAVE MORE STANZAS

### THANK YOU!

### QUESTIONS? COMMENTS?

