

The Growing Roots of Open Science

Prof. Dr. Eva Méndez

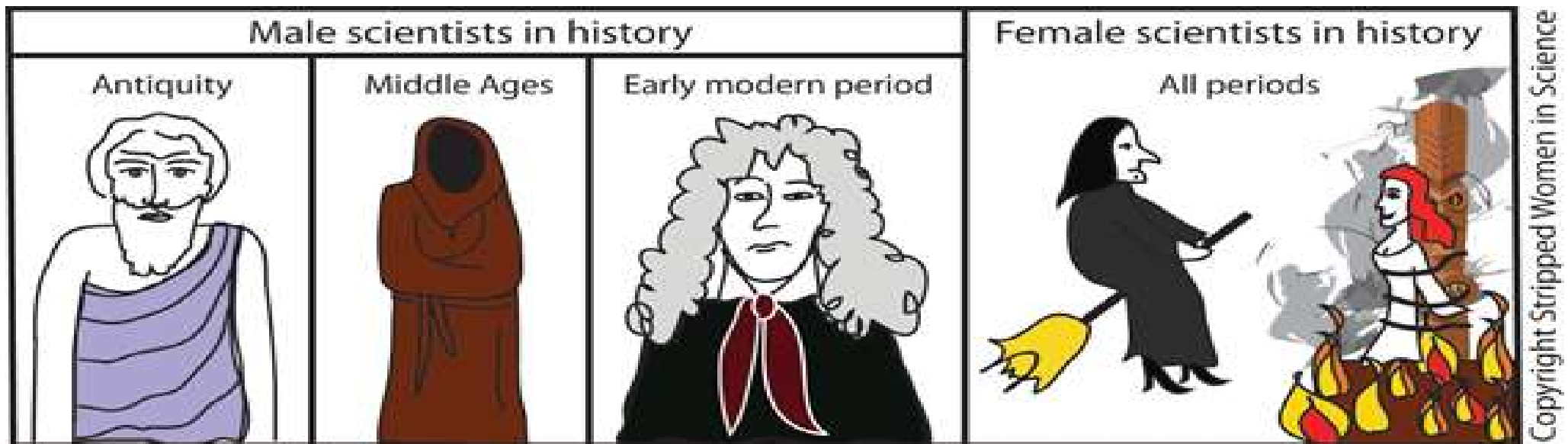
uc3m

emendez@bib.uc3m.es

@evamen

Happy #8March #WomensDay2019

#WomenInScience



Source: <http://strippedwomeninscience.blogspot.com/2011/02/women-in-science-historical-outlook.html>



Open Science with many hats



EU-OSPP chair



RPO-Universities (YERUN)



Institutional (UC3M)



OS advocate



Librarian



Researcher



Open Science

- **Concept...**

- Context (RRI, HRS4R, H2020/Eu...)
- Open Science : WHAT and WHY?

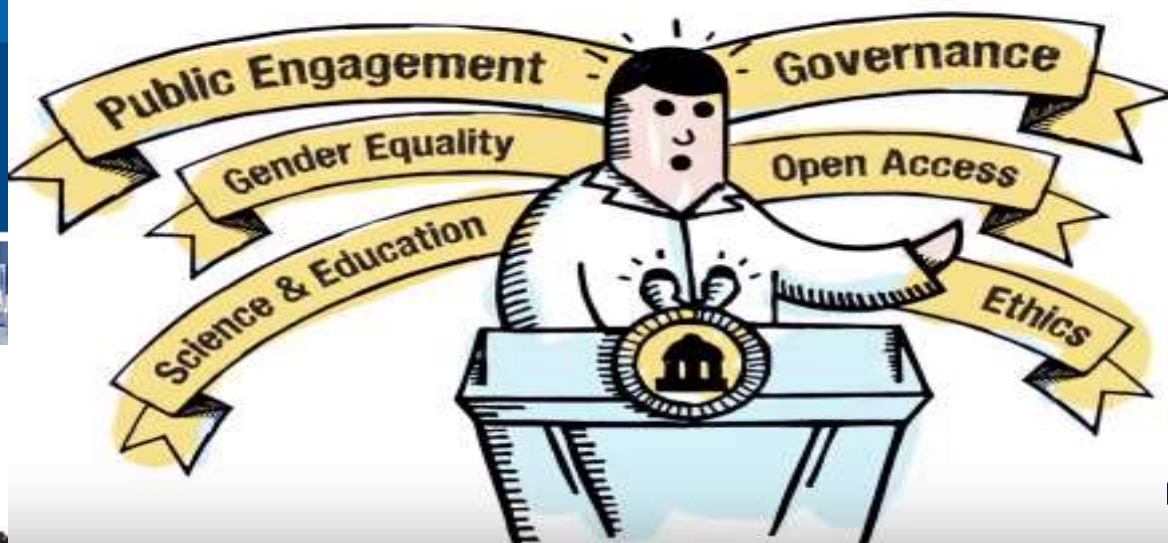
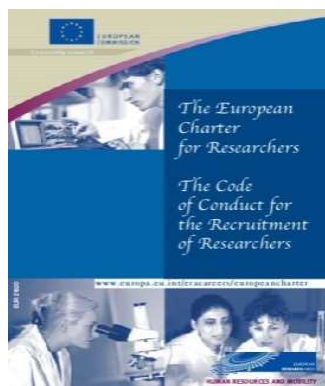
- **Challenges...**

- Cultural Change
- Rewards and incentives system
- Motivators of will

- **Implementation...**

- Open Science... HOW?
 - PCIs: Practical Commitments for Implementation
- ... and you?





HR EXCELLENCE IN RESEARCH



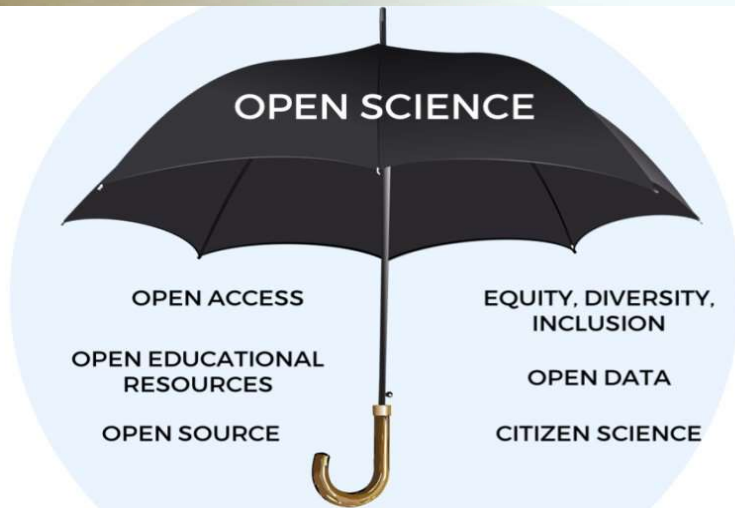
... Where **openness** and **transparency** are an integral component of the research and innovation process

Open Science Umbrella. Image credit: Flickr user 지우 황 CC BY 2.0



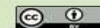
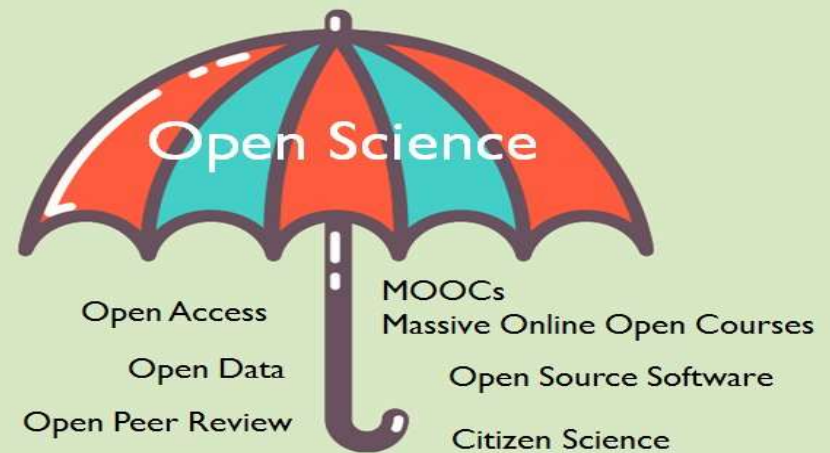
*Open science commonly refers to efforts to make the **output of publicly funded research** more **widely accessible** in **digital format** to the **scientific community**, the **business sector**, or **society** more generally ... to promote long-term **research as well as innovation**.*

[OECD Sept 2015](#)



What do we mean when we talk about Open Science?

Image courtesy of Robin Champieux

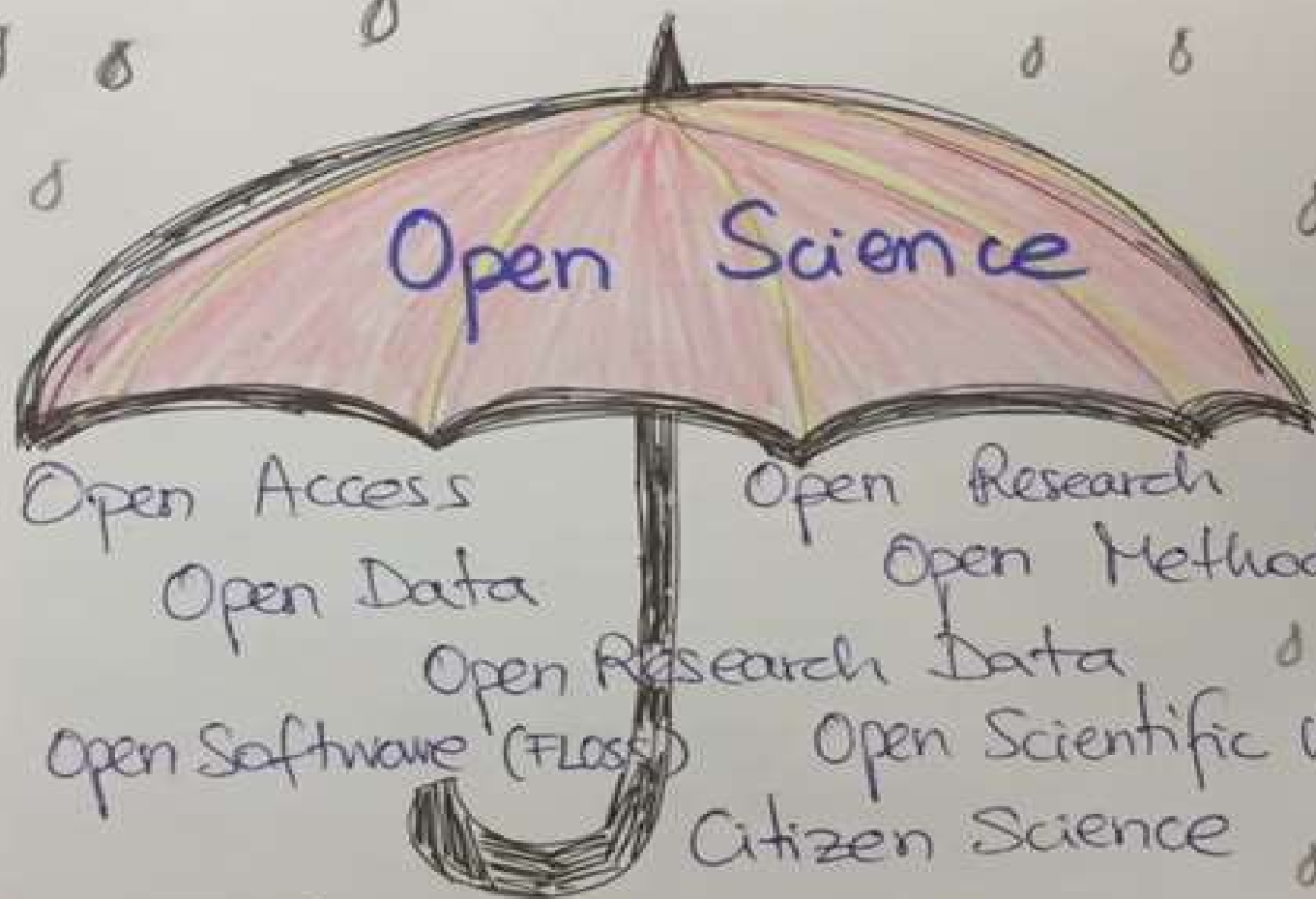


Pablo Dorta-González, 2017



BY

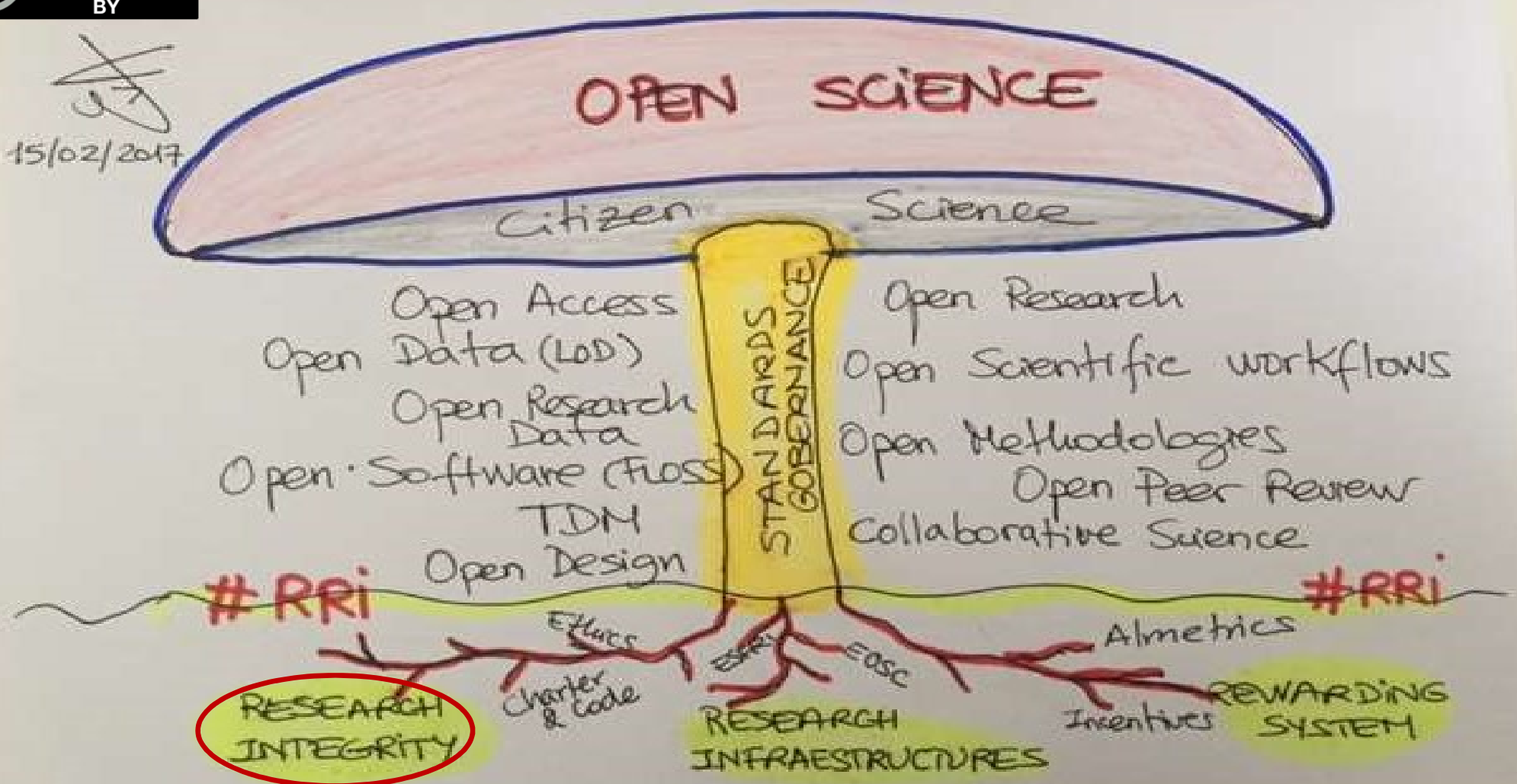
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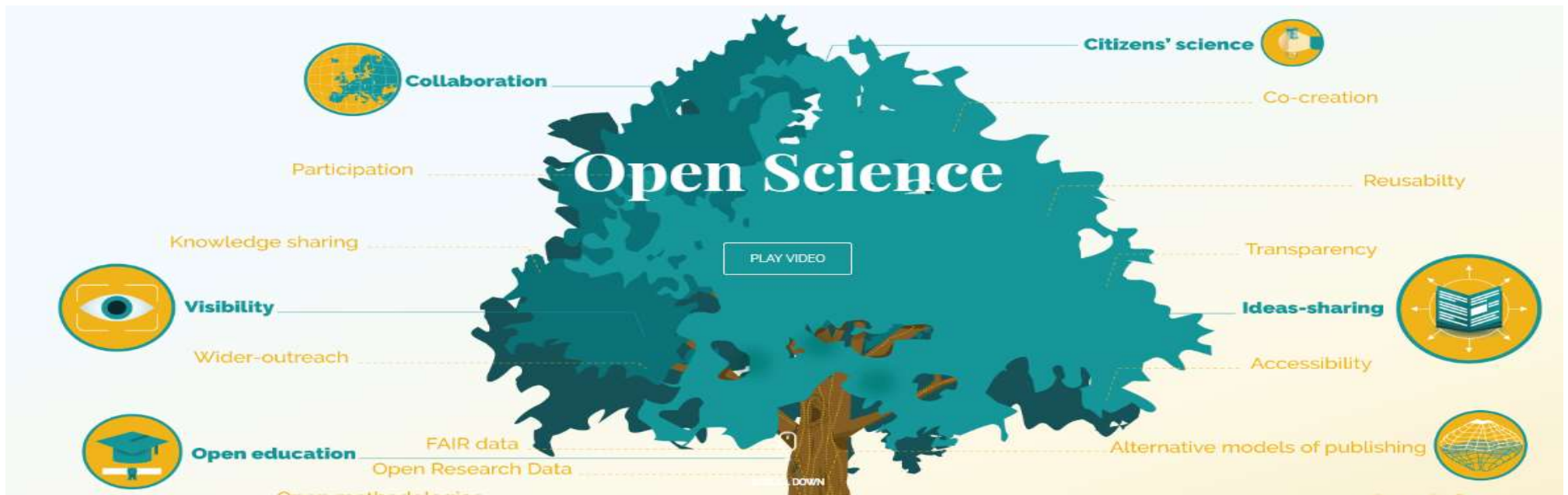
Research Integrity

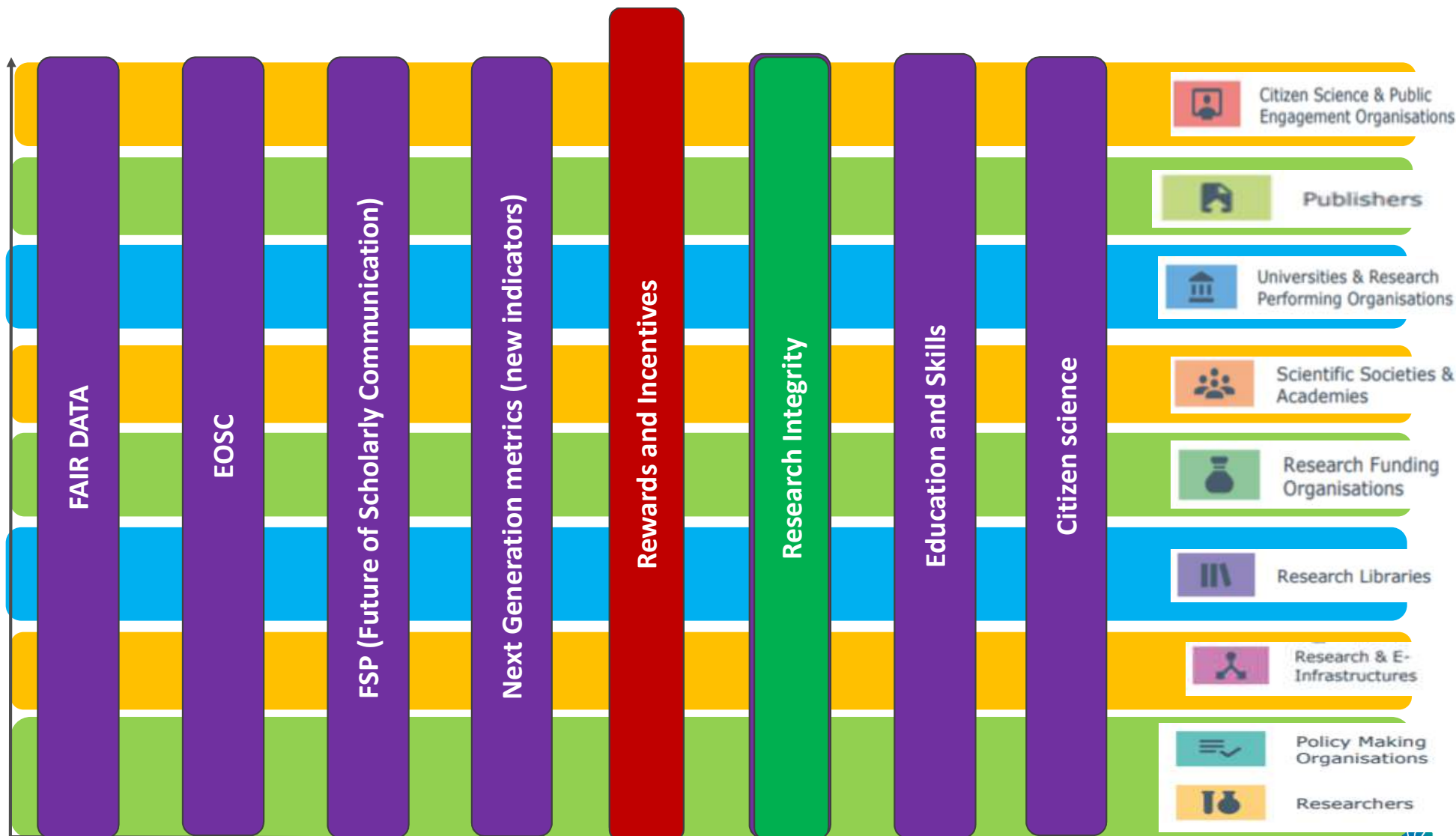
Research
Infrastructures

Altmetrics



<http://bit.ly/OpenScienceYERUN>







European Council
Council of the European Union

Competitiveness Council (May 2018)

OSPP-REC

2.2. Prioritised recommendations for the eight ambitions of Open Science

Below are a set of actionable recommendations from the OSPP to be taken as the next step towards the longer-term vision articulated by Open Science consultations and expert groups set up by the EC and other organisations in Europe and worldwide. The recommendations have been split up into the eight priorities identified from the 5 areas of the European Open Science Agenda⁶, namely:

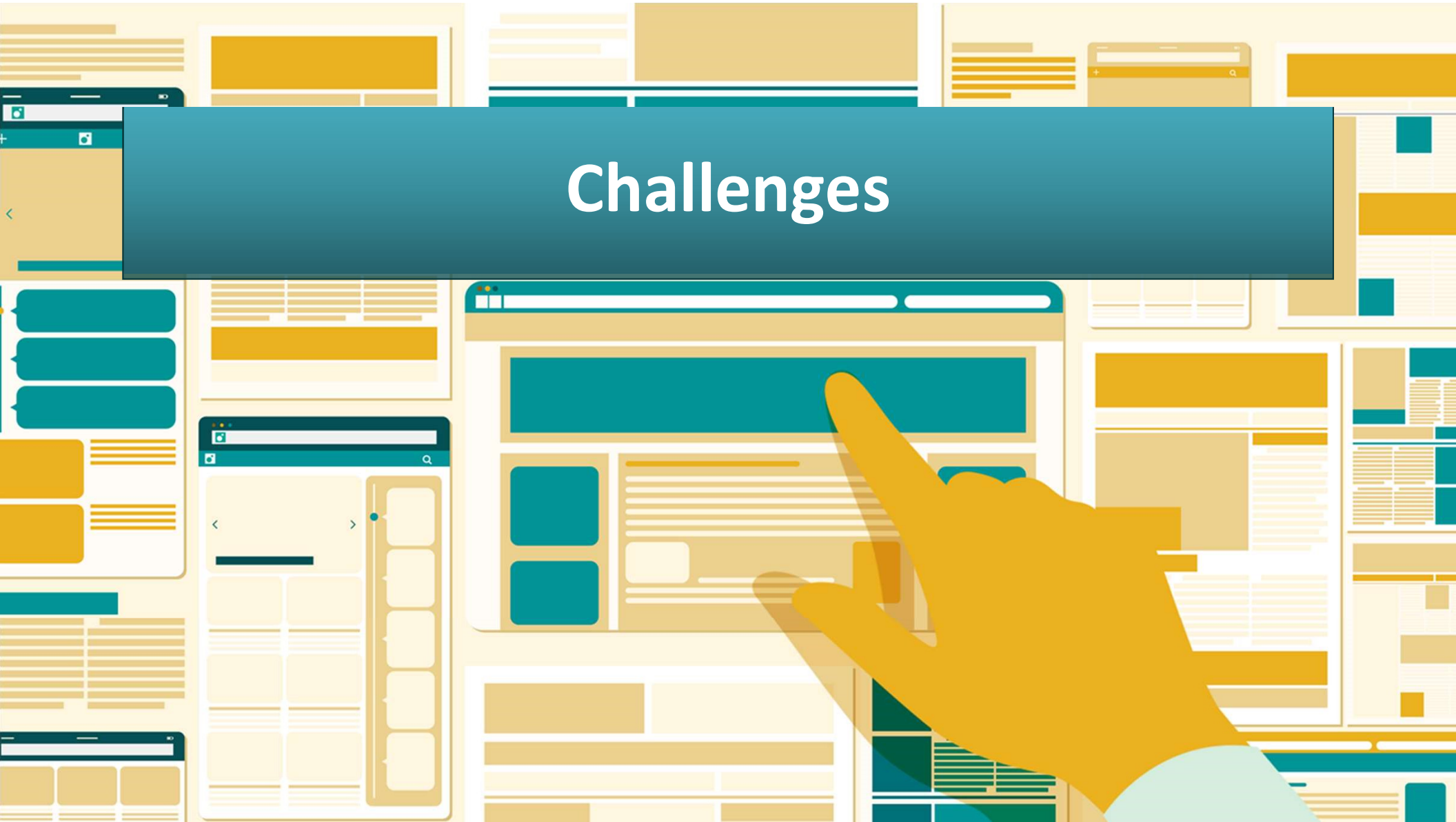
- Rewards and Incentives
- Research Indicators and Next-Generation Metrics
- Future of Scholarly Communication
- European Open Science Cloud
- FAIR Data
- Research Integrity
- Skills and Education
- Citizen Science

The major stakeholder groups (as listed in the key below) who have the main responsibility to drive the actions stated in the recommendations have been listed alongside each one.

	Research & E-Infrastructures		Research Libraries		Universities & Research Performing Organisations
	Policy Making Organisations		Research Funding Organisations		Publishers
	Researchers		Scientific Societies & Academies		Citizen Science & Public Engagement Organisations



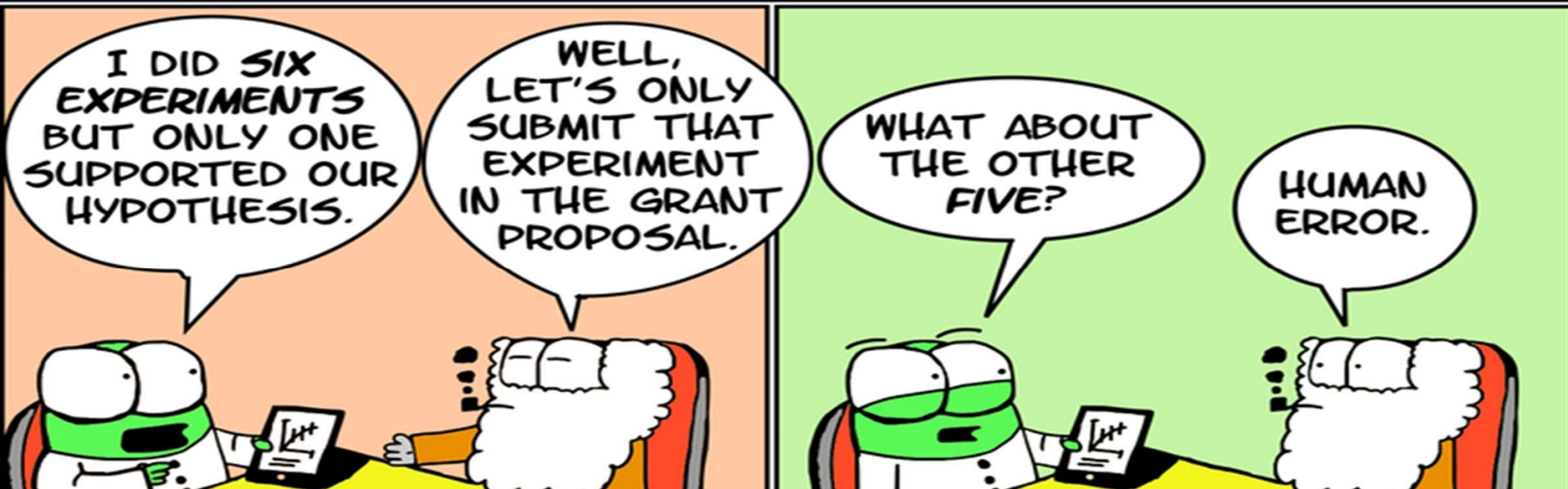
Challenges



Logical Fallacies in the Lab

CONFIRMATION BIAS

FAVOURING EVIDENCE THAT SUPPORTS YOUR PRE-EXISTING BELIEFS WHILE IGNORING EVIDENCE THAT DOESN'T.



Challenges = Building blocks

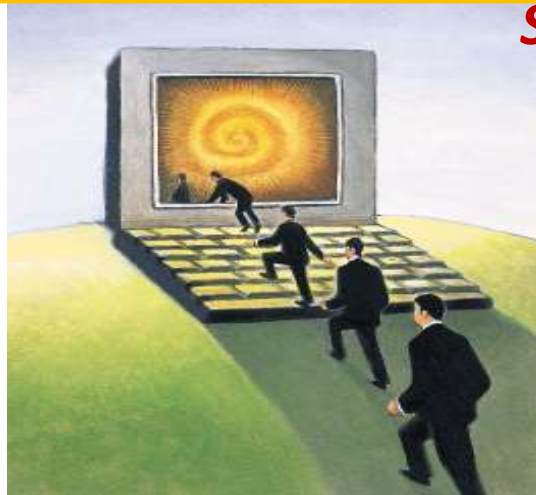
1. Removing barriers and **creating incentives** (alternative/next generation metrics, research integrity, TDM (Text and Data Mining)).
2. Developing **infrastructures** for Open Science (e.g. European Open Science Cloud, EOSC).
3. Embedding Open **Science in Society** (citizen science, public engagement... knowledge coalitions to address societal challenges).

Challenges

- **Cultural change** (researchers mindset)
[Darling, we need to talk!!]
- **Education (Skills)** → training ECR but also senior researchers
- **Attitude CC: Conviction & Confidence** → Demonstrate the impact of **Open Knowledge**
- **Strategic alignment** internal policies



Motivators of will... (for academics)



SEDUCTION

Make it very easy...
Motivate...
Help...

Implementation (PCI)

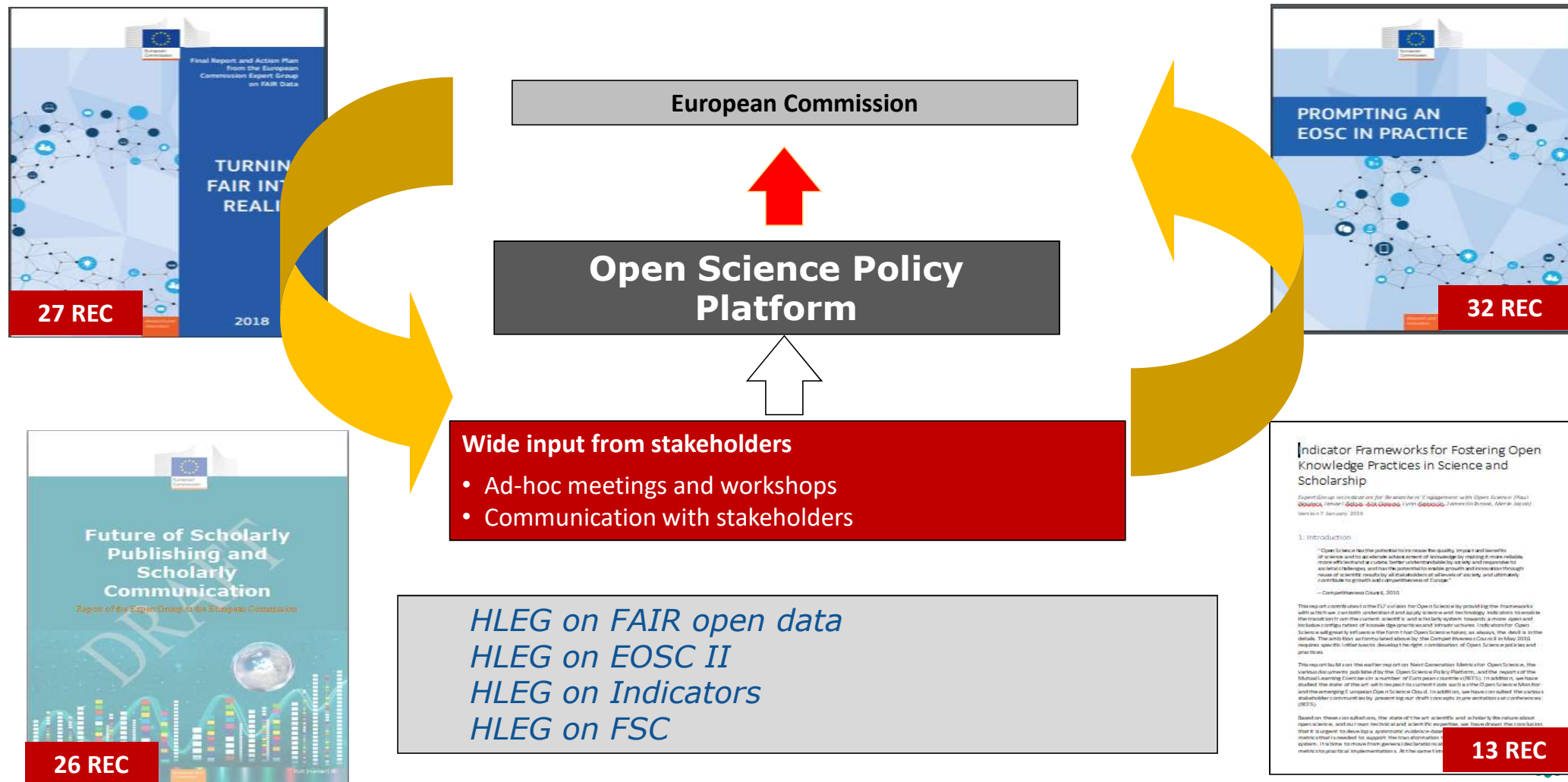
The image features a stylized illustration of a hand with a yellow skin tone pointing towards a digital interface. The background is a collage of various UI elements, including buttons, text boxes, and navigation menus, rendered in a flat design style with a color palette of teal, yellow, and light beige. A dark teal horizontal bar is positioned across the upper middle of the image, containing the text 'Implementation (PCI)' in white. The hand is positioned in the lower right, with its index finger pointing towards the center of the interface.

Open Science: but HOW?



- How to **incentivize** the systemic change?
- How does it affect our researchers? → Promotion, research assessment...
- How does it affect our research **infrastructures**? → New ones?
- How does it affect our T&Learning? → Data **literacies**?
- How does it affect to our researcher's **behavior** (**research integrity**)
→ Public Institutions + **Transparency**

Where we are? Among **RE**Ports (4)& **RE**Commendations (87)





Evaluation of Research Careers fully acknowledging Open Science Practices

Rewards, incentive

Written by the Working Group
July - 2017



Providing researchers with the skills and competencies they need to practise Open Science

Open Science Skills Working Group Report

Working Group on Education and Skills under Open Science



Next-generation metrics: Responsible metrics and evaluation for open science



The European Code of Conduct for Research Integrity

REVISED EDITION



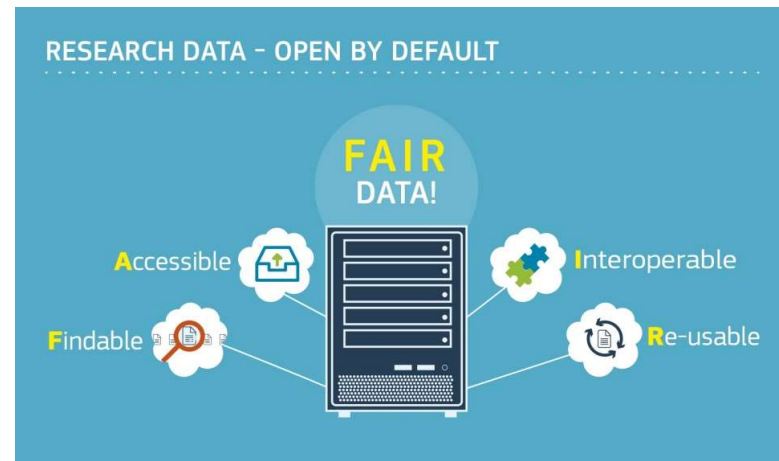
OPENESS, FAIR, EOSC...



EUROPEAN OPEN
SCIENCE CLOUD

- FAIRRR
- Reproducibility
- Reliability
- Serendipity
- Data-driven research
- Multidisciplinarity
- Transparency
- Engagement
- Inspiration

reliability
serendipity
multidisciplinarity
data-driven research
reproducibility
inspiration
openness
fairrr



We need **PCIs** (Practical Commitments for Implementation) in Open Science

- Shift from “*declaration/recommendation mode*” → to “implementation mode”
- You, at your institution, at your office, with your attributions, etc. **what can you do for Open Science?** (regarding the 8 challenges, and taking into account your condition as stakeholder...)
 - I am a researcher....
 - I am a policy maker...
 - I am a publisher...
 - I am a research infrastructure manager...
 - I am a librarian, etc.



What are **PCIs** in Open Science

- **Commitments** regarding any aspect (challenge) of Open Science
- Actual, **realistic** and **affordable**... in a level where the proponent has “jurisdiction”
- **Effect** → real **implementation**
- They answer to the question: *What **CAN** I do to make Open Science happen?*
- Open science at “action level” (**practical**)

And you? What are you going to do?



Introduction video: Conference Open Science 4- 5 April 2016, **Dutch Presidency EU2016**:

<https://www.youtube.com/watch?v=C9a3Ap3yyak>

[[Amsterdam Call for Action](#)]



Thank you!



emendez@bib.uc3m.es

@evamen

