

Welcome!

CODATA-RDA School of Research Data Science
#dataSãoPaulo18

<https://pad.carpentries.org/dataSãoPaulo18>



IFT



SPRINGER
NATURE



Introductions

Responsible, Open Science Citizenship

Marcela Alfaro Córdoba



Special thanks to Louise Bezuidenhout and Hugh Shanahan for providing the material and guidance.

Why Start With A Discussion on Responsibility?

Plan for the morning:

1. Responsible conduct of research
2. Open science
3. Being a responsible, open science citizen

Not just about learning data science ... learning responsible data practices

What Do You Think “Responsible Science” Is?

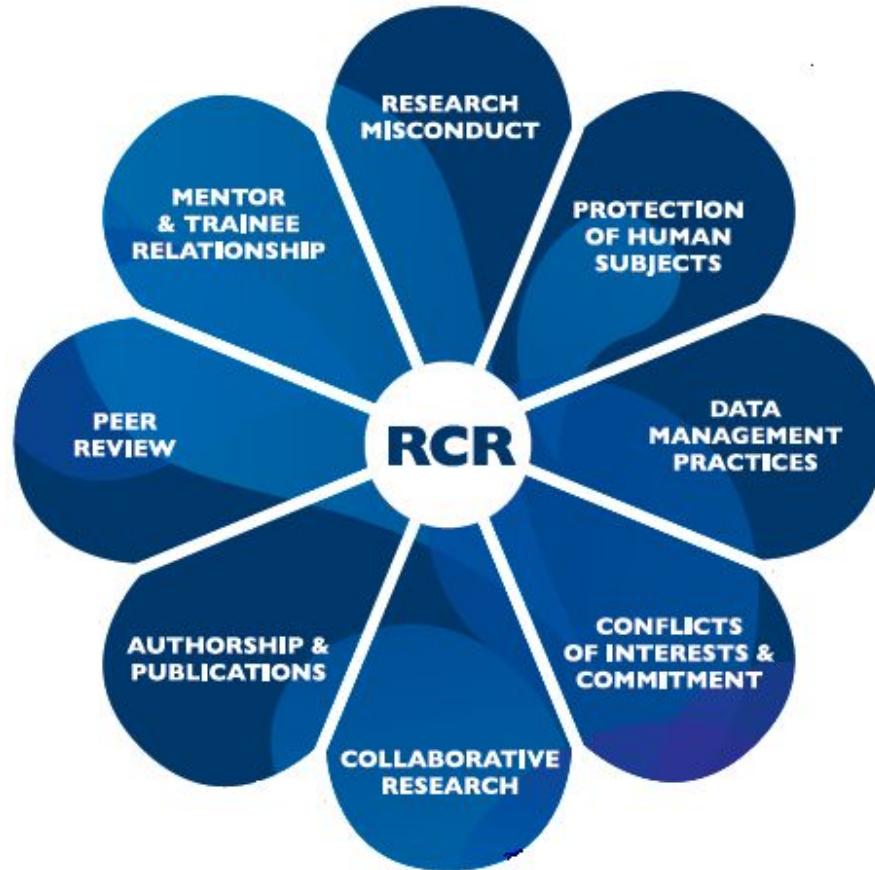
We hear a lot about “responsible science” or being a “responsible scientist”, but what does it mean to you?

1. As groups take 20 minutes to identify some key activities that describe “responsible science” or “responsible scientists”. Prepare to present to the rest of the group:
 - What is responsibility in research?
 - Does it differ by discipline? Does it matter what methods are used?
 - Does it change as you progress up the career ladder?

Balancing Multiple Roles as a Scientist

- Data producer
- Data user and/or collaborator
- Author
- Employee
- Teacher/mentor
- Recipient of public funds
- Recipient of public trust
- Citizen/legally-obligated individual





Not just about being

- “good at your work”
- producing data

RCR as a Collaborative Endeavour



Changing The Practices, Environments and Practitioners

- Individual responsibility
 - Compliance
 - Active engagement
- Institutions
 - Create supportive infrastructures
 - Monitor and mediate
- National/international systems
- International science community
 - Monitoring
 - Fostering culture

Key Traits of “Responsibility” Discussions

- Practice of scientific investigation with integrity

integrity

/ɪnˈteɡrɪti/ 

noun

1. the quality of being honest and having strong moral principles.
"a gentleman of complete integrity"
synonyms: honesty, uprightness, probity, rectitude, honour, honourableness, upstandingness, good character, principle(s), ethics, morals, righteousness, morality, nobility, high-mindedness, right-mindedness, noble-mindedness, virtue, decency, fairness, scrupulousness, sincerity, truthfulness, trustworthiness
"I never doubted his integrity"
2. the state of being whole and undivided.
"upholding territorial integrity and national sovereignty"
synonyms: unity, unification, wholeness, coherence, cohesion, undividedness, togetherness, solidarity, coalition
"internal racial unrest threatened the integrity of the federation"

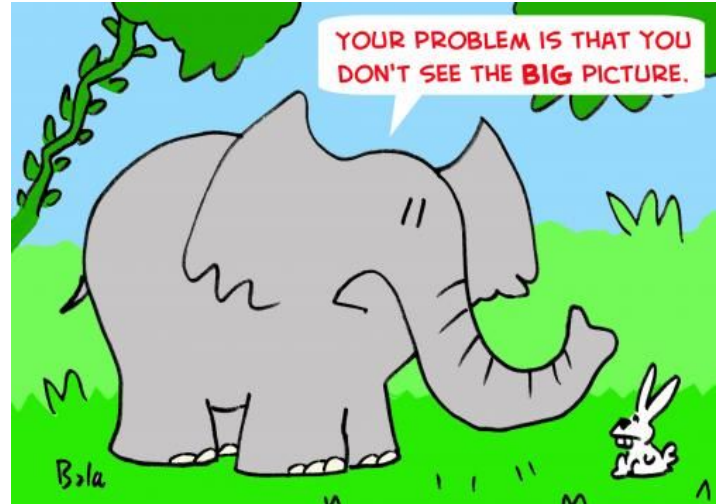
Key Ethical Norms

- Awareness and application of professional norms and ethical principles in all areas relating to scientific research
- Beneficence
- Non-maleficence
- Accountability
- Transparency
- Care
- Collegiality



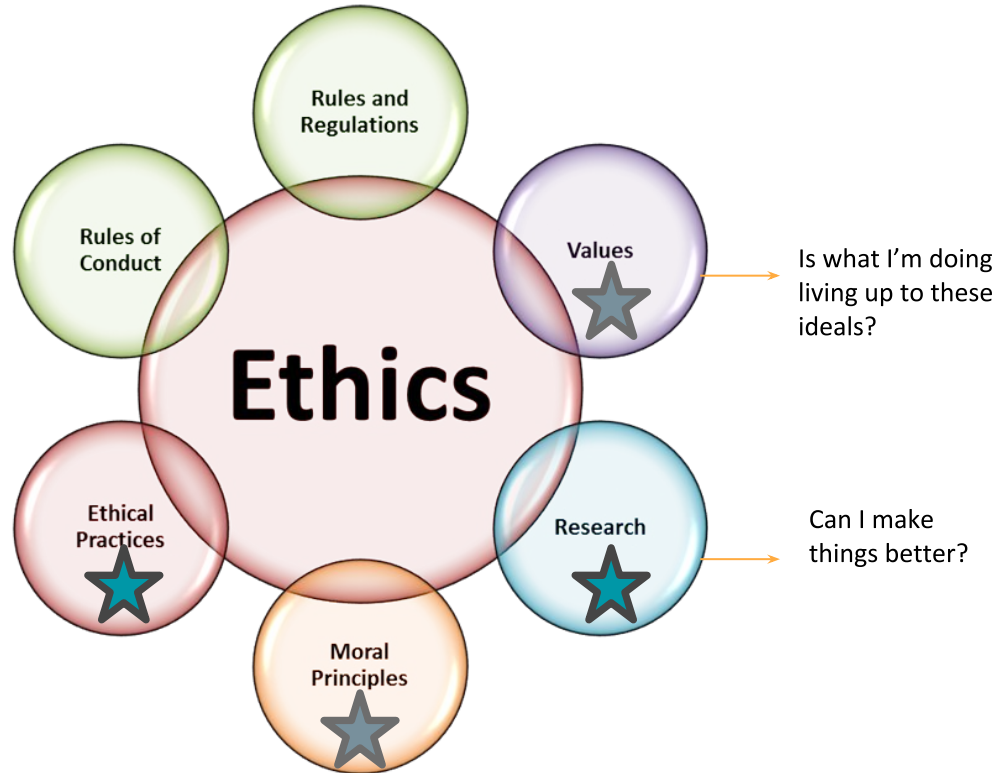
Responsible Conduct of Research

- Promotes the idea of a "science citizenship" to the global science community
- Citizenship is a give and take
 - Benefits to enjoy
 - Responsibilities to assume
- Support and grow culture instead of just living in it



<http://www.evilenglish.net/the-big-picture/>


More holistic views on ethics



Cultures of Responsibility



- Produce verifiable and re-usable data
- Protect scientists and societies from harm
- Enable collaboration
- Ensure investments (financial, trust, time etc) are recompensed
- Embeds science within cultural/social priorities

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- Amount and types of data being produced
 - Practices of science
 - What constitutes “good practice”
 - How science “citizenship” is understood

The Limitless Possibilities of an Open World

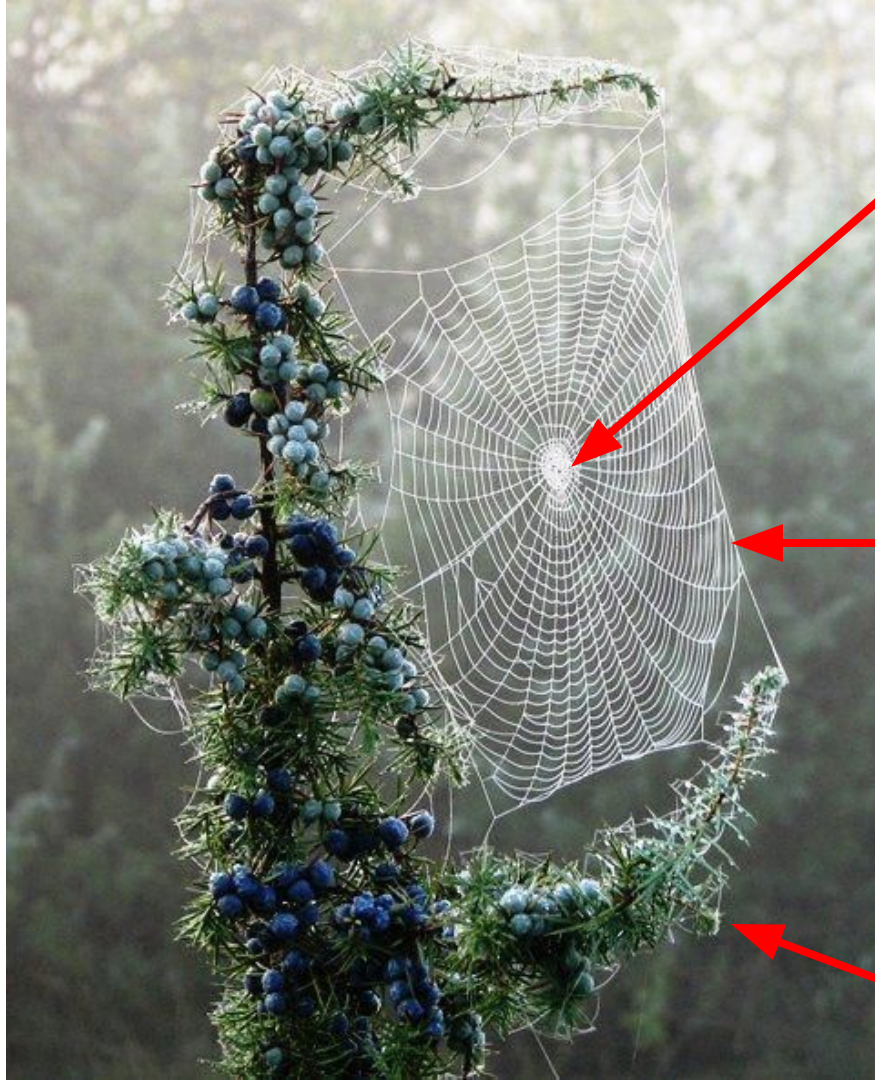


Translating Science Citizenship into a Digital Age

- Understandings of RCR in a digital age continue to evolve
- Extension of existing discussion, but also new areas for concern
 - Opportunity to share vs loss of control
 - Increase benefits of research for public vs [possible harms](#)
 - (Un)Intended [marginalizations](#)
 - Data recombination, re-use

A New Ethos for Scientific Research

- How can the evolving power of digital technologies be harnessed to uphold the principles of scientific citizenship?
- How can practices and structures of scientific research be adapted to ensure that research benefits the most number of people?
- How can the culture of science be adapted to support this evolution?
- What is the role of the individual scientist in this revolution?



Responsible Conduct of Research in a Digital Age?

- What are some of the challenges of conducting responsible research in an increasingly digital environment?
- As groups take 10 - 15 minutes to identify some key challenges. Write these down on post-its.

The Open Science Movement



Justice

Open Science

- The products of scientific research should be freely available to everyone to use and re-publish as they wish, without restrictions from copyright, patents or other mechanisms of control
- Open Science includes activities that:
 - *facilitate resource sharing*
 - *improve awareness of sharing*
 - *create linkages between resources*
 - *advocate for removal of financial barriers*



Ethics of Openness

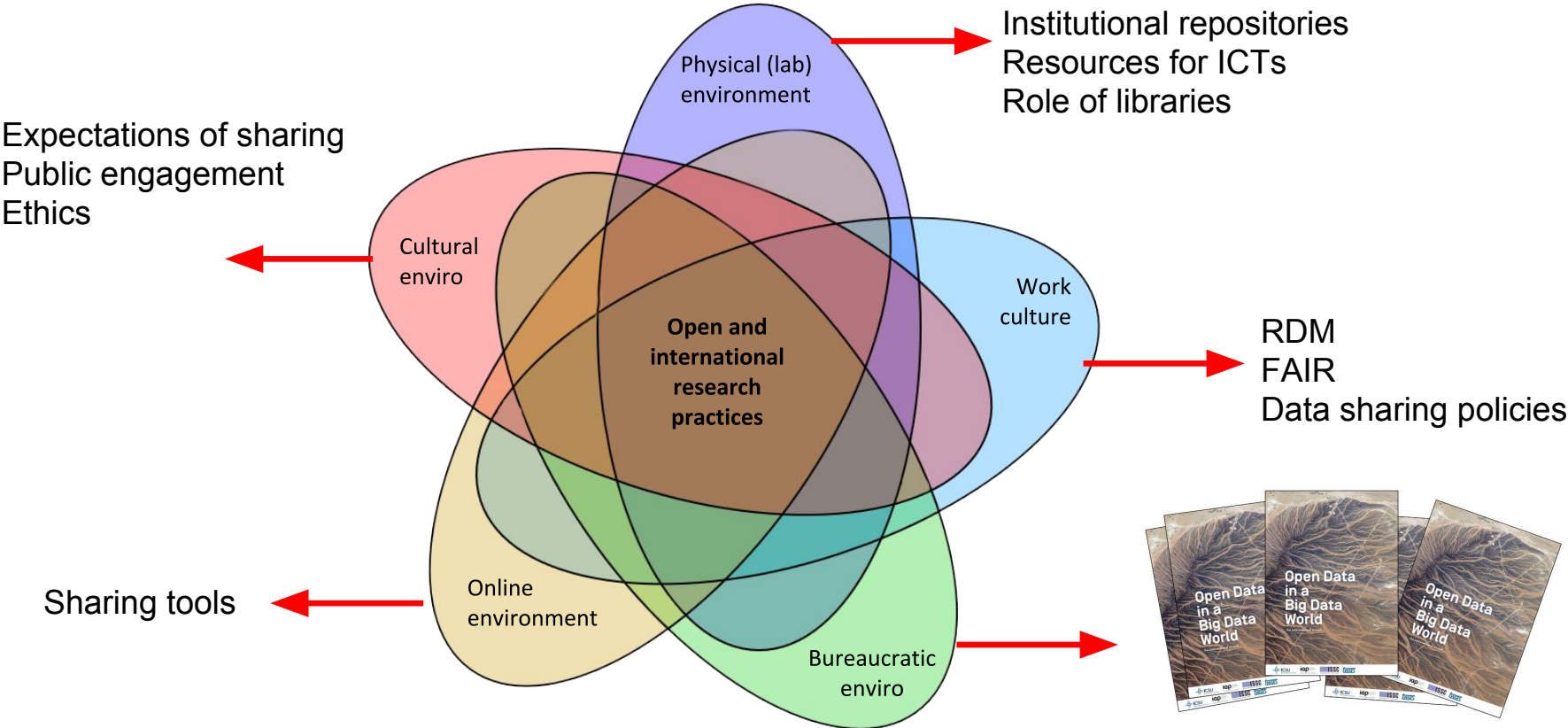
Openness as ...

- The just distribution of resources (public funds and research products)
- A way of maximizing the benefits of research
- A safeguard against possible harms arising from research
- As a means of improving accountability and transparency
- An enactment of collegiality
- The obvious extension of the norms of science (CUDOS)

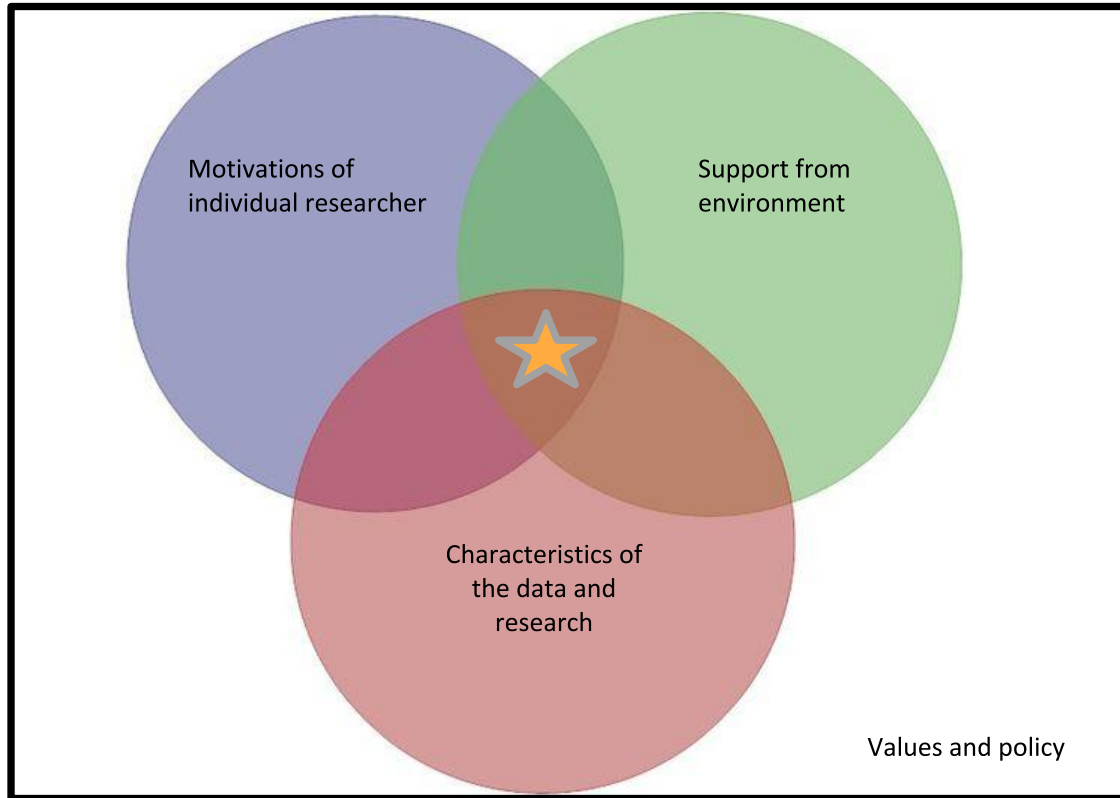
A Range of Different Activities

- Legal/economic
- Educational
- Advocacy
- Standardization and standard setting

Creating Open Environments



Openness in daily research practices



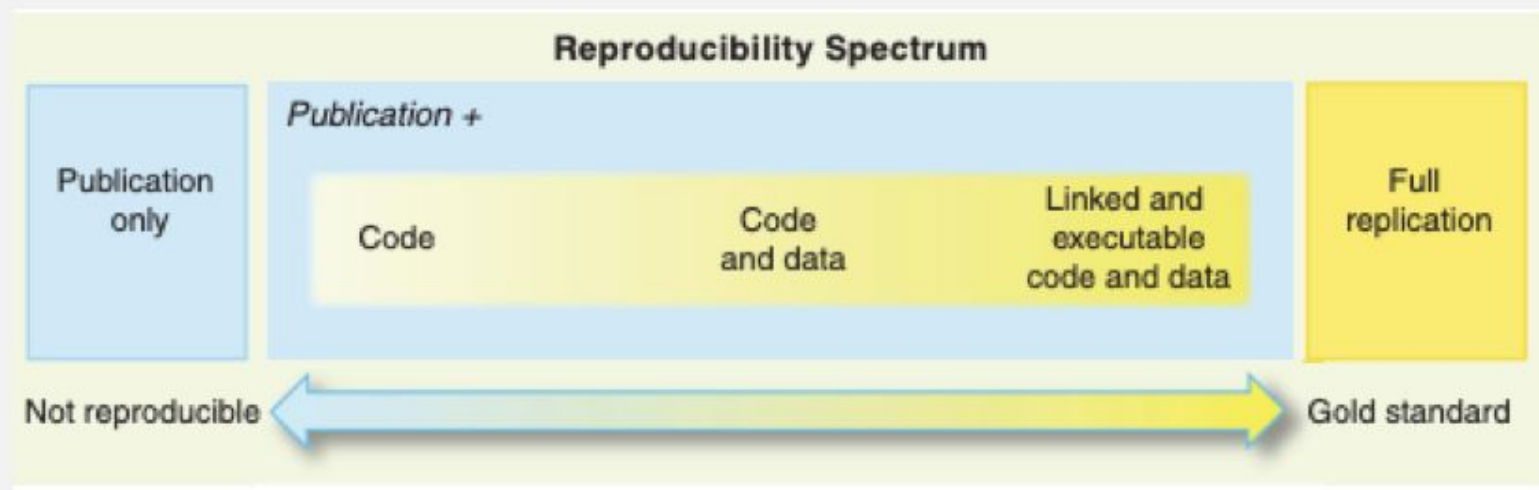
Multiple Roles and Openness

- Data producer
- Data user and/or collaborator
- Author
- Employee
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Working openly, responsibly and reproducibly ...

"Your primary collaborator is yourself 6 months from now, and your past self doesn't answer emails" (Russ Poldrack)



Steps to Openness

1. Ethical: why is openness important?
 1. *Yes, I understand ... sign me up!*
2. Understand the legal environment
 1. *I know when I shouldn't be sharing data*
 2. *I know what true openness looks like (predatory journals)*
 3. *I know that openness is not the same as restriction-less*
3. Scrutinize daily research practices
 1. *What could you be making more open – data, publications, methods etc?*
 2. *Are there key challenges that you need to consider?*

Steps to Openness

4. What tools are available online that can help your quest for openness?

1. Practical tools, support systems, communities of practice

5. Understanding the big picture as well as the little picture

1. How openness is changing science

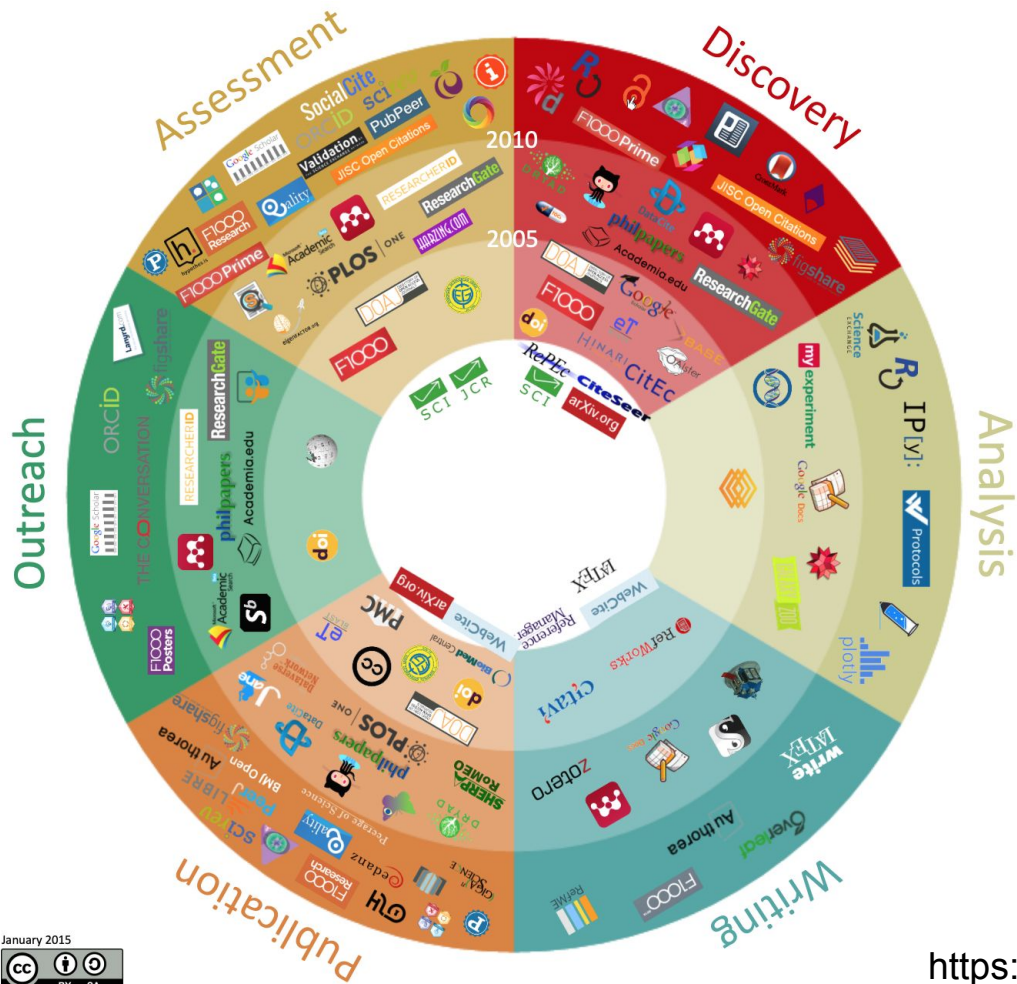
2. How the infrastructures of this changing landscape need to be scrutinized

3. How my actions contribute to this big picture

6. Becoming an advocate for openness within your own environment

1. Being a champion amongst peers and students

2. Advocating for national change



Resources

<https://101innovations.wordpress.com/workflows/>



Personal Concerns

Lack of awareness and training.

Cultural inertia and misinformation.

Challenging the establishment.

Following the status quo.

Lack of reward.

Publication bias towards novel findings.

Resources.

Fear - of being scooped, scrutinized, reduced scientific quality, risk to reputation.

Experiencing Challenges is Normal

Group discussion:

What specific challenges do you anticipate encountering when you return home in terms of your data work?

1. Using this [working sheet](#), go through the categories of RDM and RCR and think about challenges you will experience.
2. Discuss specific, or general challenges in your groups.
3. Will this affect your ability to be responsible and open?

Plan for Open Science Training

December 7th

9:30 - 11:00 - >

Survey results 10 mins

[Intro to RDM](#) 45 mins + questions

[Discussion exercise on FAIR checklist](#) 40 mins

11:30 – 12:30 - >

[intro to DMPs](#) - close on [looking at a DMP](#) note what is good and how to improve it

Research Data Management (Steve Diggs) Lab

13:30 – 15:00 - >

Group Work

15:30 – 17:30 - >

Group Presentations

December 10th

10:30 – 11:00 - >

CODATA-RDA intro session (Marcela Alfaro Córdoba/Rob Quick) Class

11:30 – 12:30 - >

Open Science 2 (Marcela Alfaro Córdoba) Class

Group work: <https://docs.google.com/document/d/1BexsLKdSEED7EDFswaOFCralifQD2kmvAWkGiIdBEDY/edit>



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Next class: Shell