



Openness Revisited. Research integrity in an open research environment

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Menu



- **Setting the stage**
- Three key questions
- Some difficulties
- The landscape
- Variety of values
- Proposed strategy
- Two faces of openness
- Implications and next steps

Setting the stage

- Focus will be on research integrity in an open research environment – a complex issue
- What can I apply or use from the ongoing MLE (mutual learning experience) on RI?
- What can I apply from the reception of the revised European Code of Conduct, CoC?

The background is promising

- RI is mentioned explicitly in one of the actionable recommendations of the Open Science Policy Platform
- Moreover, "open" and "transparent" are mentioned in many of the paragraphs in the revised European C of C
- But the background is also complex; many policies and key concepts have developed over the years and are likely to continue to do so

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Three key questions

- How does research integrity (RI) requirements contribute to Open research (OR)?
- How can OR requirements support or challenge RI processes?
- How do the linked topics of RI and OR contribute to the overall RRI (Responsible Research and Innovation) agenda?



Interpretations

- (1) as straightforward **causal** questions about whether available means – to deal with obstacles on the road to the goals – will lead to certain specific ends,
- (2) as a combination of **causal and goal-related** questions – whether there are alternative methods that better (more efficiently, quickly, cheaply...) will help to achieve the (desired) ends,
- (3) as comparisons and **analyses of the goals**: do they pull in different directions, are they identical, or are the goals of the RI agenda included in the OR agenda, and are the latter included in the goals of the OS agenda?

RRI introduction

- The notion of RRI has its origin in a EC Science in Society workshop in Brussels, May 2011
- "Responsible Research and Innovation means that societal actors work together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society."
 - European Commission. *Responsible Research and Innovation: Europe's Ability to Respond to Societal Challenges*. Brussels: European Commission, 2012

RRI in practice

- In practice, RRI is implemented as a package that includes
- multi-actor and **public engagement** in research and innovation, enabling easier access to scientific results,
- the take up of **gender and ethics** in the research and innovation content and process,
- and formal and informal **science education**



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A difficulty: causal claims

- "Contribute to" and "challenge" are terms with causal implications
- Some causal hypotheses can be very difficult to prove.
- Sometimes it is hard to exclude all alternative explanations.



The definition of RI

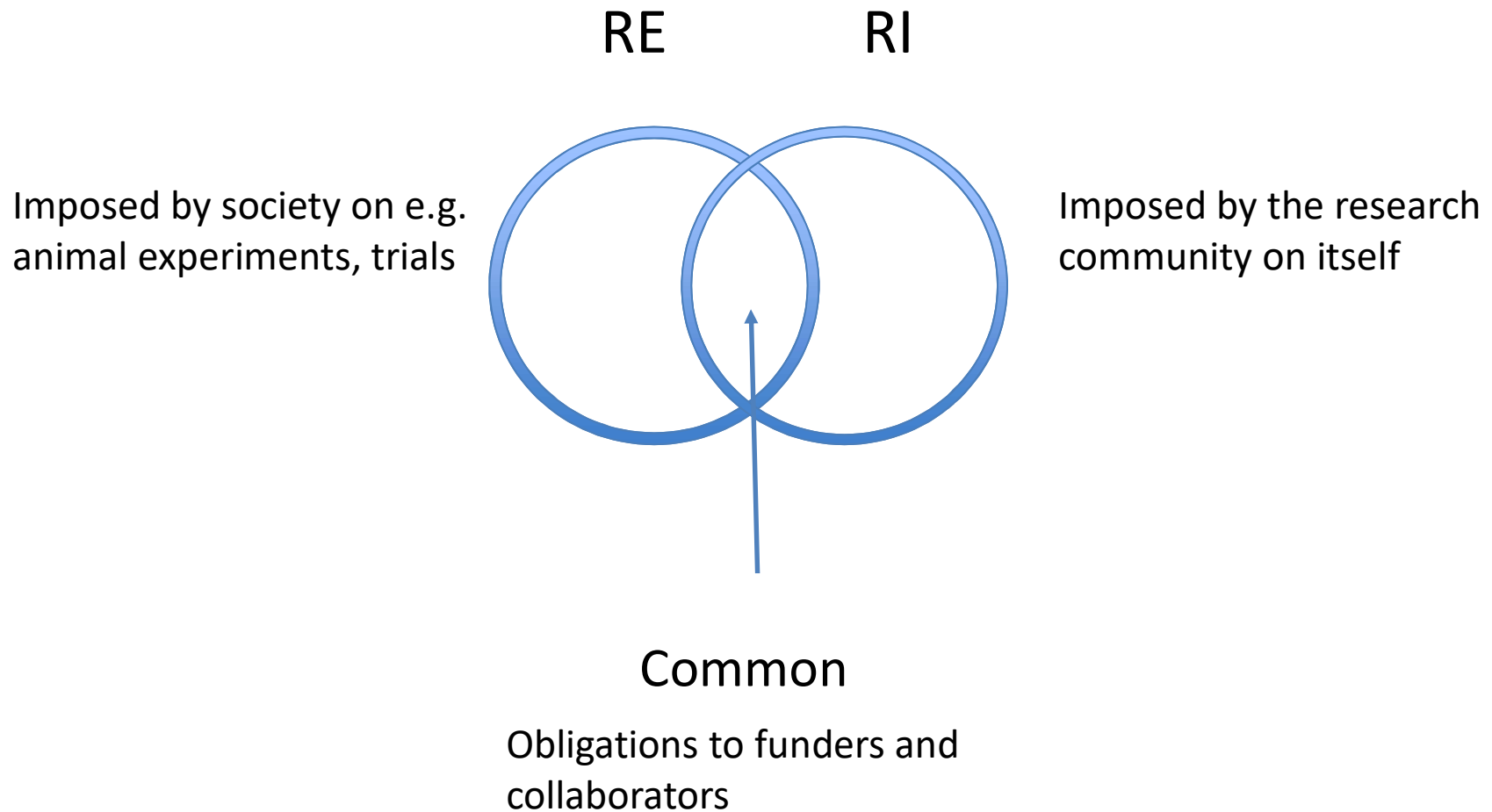
- No explicit definition of RI? Some problems avoided, others remain unsolved
- Different methods, changing methods, different concepts?
- Independence: intellectual and financial?



**The European
Code of Conduct for
Research Integrity**
REVISED EDITION



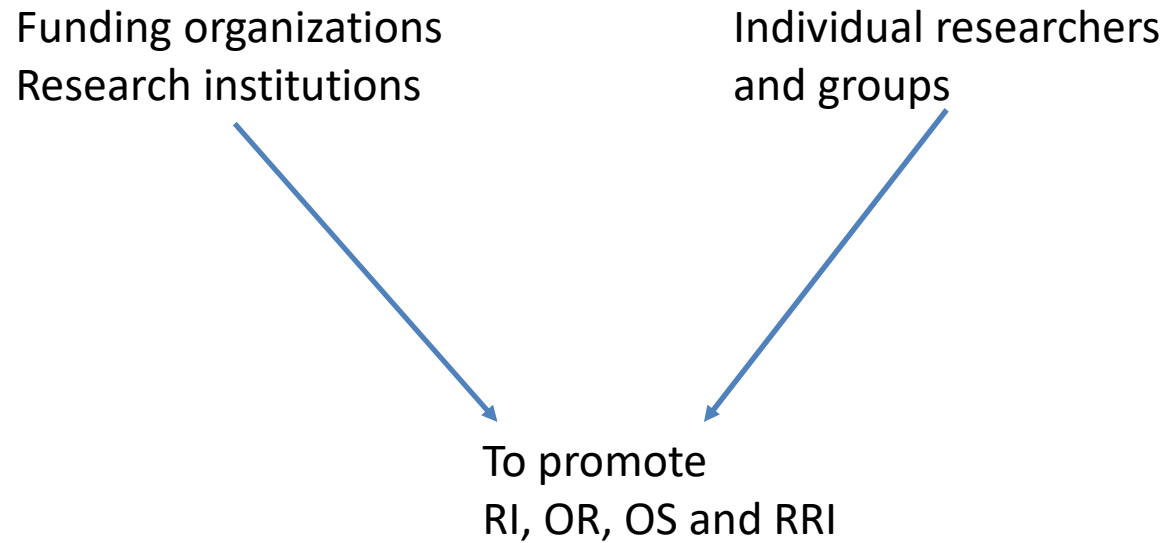
Origin of rules and regulations



Threats to independence

- Research integrity can be undermined if political, economic, religious and other interests are allowed to influence the current methodological canons
- Emphasis on self-regulation is consistent with one basic dictionary meaning of integrity: as noun, 'wholeness, unity'; as adjective, 'untouched', 'uncontaminated'.

Whose responsibility?



Autonomy?

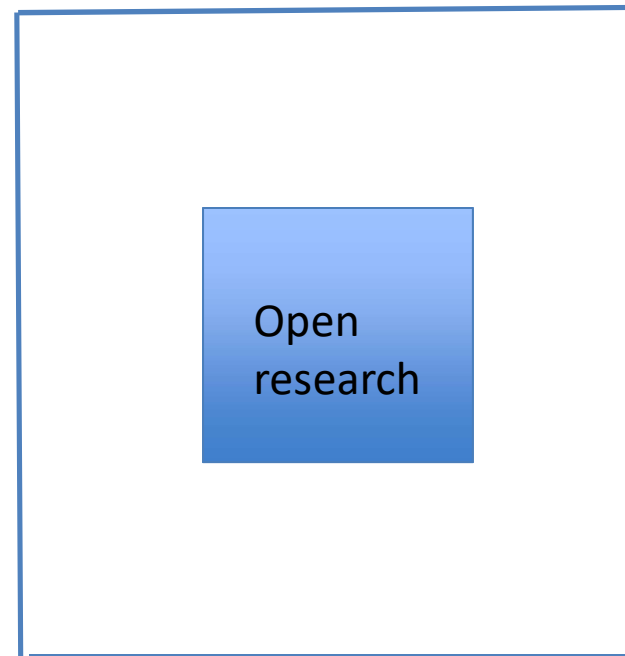
- There is an interesting analogy between the debates on the autonomy of science and the autonomy of art
- “There is no such thing as a moral or an immoral book. Books are well written, or badly written. That is all.”



The relations between OR and OS

- **Open science** is an umbrella including open access publishing, open data, open peer review and **open research**
 - Evaluation of Research Careers fully acknowledging Open Science Practices
- But what does **Open research** cover?
- Open Access to research publications
- Enabling FAIR research data
 - NORF National Statement on the transition to an Open Research Environment

- Open Science



The relations between RI, RRI and CoC

- **RRI** is a key action of the Swafs program. One of the sub areas of Swafs is **ethics** and **RI** is mentioned as one of the main dimensions:
- “To ensure the reliability and independence of the research so that no misconduct or negligence calls the research results into question
- (the key guide to this is the [European Code of Conduct for Research Integrity](#))”



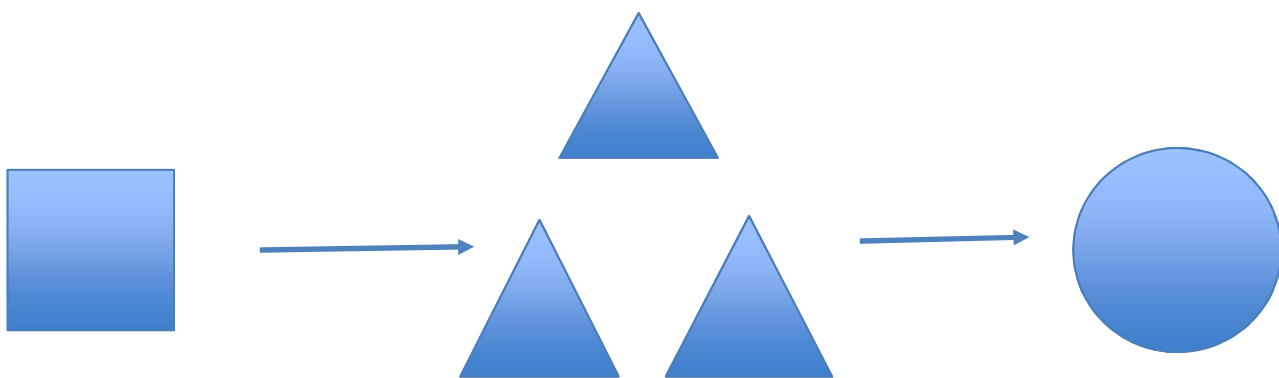
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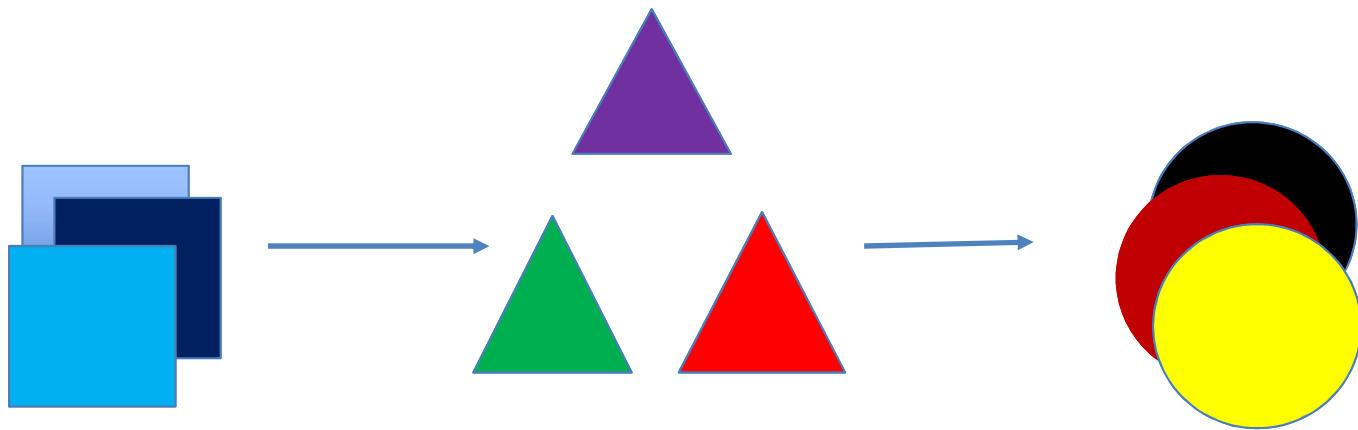


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The landscape

- The structure of the landscape will be described by using the four key concepts:
- **present situation** ("where are we?"),
- **goals** ("where do we want to be?"),
- **obstacles** ("what obstacles are there on the road to the goals?"),
- **strategies or means** ("How can we deal with the obstacles?")





Current situation

Obstacles

Goals

Moreover, ...

- The RI landscape is not identical with the OR landscape, and
- they may be interconnected and in their turn
- related to a more complex landscape mapping the OS agenda



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Variety of values

- Which values, and whose values, are built into the design of self-driving cars and other digital technologies?
- Neither scientific nor the value landscape is static. The latter landscape consists of values of different kinds
- Norms, laws, ideals, ethics can be described in many ways, but the important thing is something else:

Overload of values

- We want to achieve many things - and want to avoid many others; and the values are sometimes in conflict:
- surveillance and privacy, autonomy and justice, sustainability and safety, integrity and prevention of disease, green society and continue our current lifestyle....
- If we cannot have all of them, the values need to be clarified and ranked in importance.

RRI process dimensions

- Four process dimensions are emphasized in the RRI tools: diverse and inclusive; anticipative and reflective; **open and transparent**, responsive and adaptive to change.
- This means making the process of research and innovation more transparent and open to all actors, providing them with meaningful information during all stages of the process.
- This encourages all actors and the public to engage with, discuss and scrutinize science and technology, which empowers people to make more informed decisions.

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A closer look and some comparisons

- Focus on the chains of means and ends
- Focus on the relations between goals
- Focus on the rewards in the various agendas



Means to achieve or promote RI

- The means proposed in the CoC focus on providing adequate infrastructure, funding and training
- *The latter includes training in research ethics, research integrity and scientific methodology.*
- Many examples e g in section 2 of the CoC



Stick or carrot?
Not just carrot or stick

Means to promote RRI – somewhat different

- Open communication about methods and results to facilitate dialogue and control of results
- Early involvement of society in research and innovation
- Broader foresight and impact assessments for new technologies beyond their anticipated market-benefits and risks, guided by stakeholder norms and values.
- What does this mean for policymakers? One of the six themes for policymakers to consider is **Open Access**.

The status of RI and OR

- Neither RRI, RI, OR and OS are ends in themselves.
- They are, or can at least be understood as, means to other ...
- scientifically and politically important ends



Long-range goals of RRI

- RRI is about achieving a more knowledge-based society
- RRI contributes to generate better solutions to societal challenges,
- such as the seven grand challenges articulated by the European Commission (Health, Food security, Climate action...)

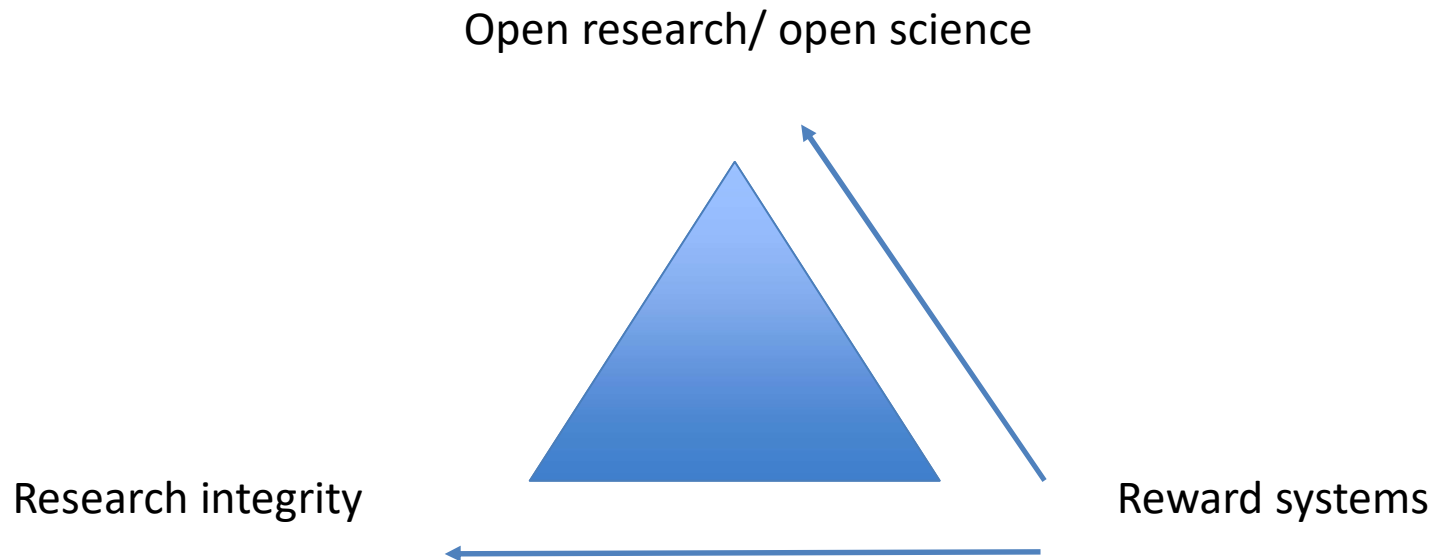
General long-range goals of RI and OR

- These goals include to promote trust and confidence of the international research community, society, users and colleagues,
- specifically: promote justified trust and to counteract unjustified mistrust of research; as well as to avoid damaging the research processes,
- and avoid wasting resources and exposing research subjects, users, society or the environment to unnecessary harm

Relations between reward systems

- The reward systems are underlying many of the current problems
- in open science (by slowing down the start of open access, for instance)
- and in RI (by tempting researchers to cut corners).





- The reward systems are discussed in the CoC, the NORF text, and in the EU document *Evaluation of Research Careers fully acknowledging Open Science Practices*.
- We cannot take for granted that the same rewards will work equally well and effectively to promote RI and to promote OS or OR

Pre-established harmony?

- Sometimes it is suggested that there is a pre-established harmony between OS and RI:
- "Open science goes hand in hand with research integrity"
 - Evaluation of Research Careers fully acknowledging Open Science Practices.



Leibniz

Open to a possibility?

- There are other ways of evaluating research than metrics and Journal Impact Factor. A broad view of incentives to promote RI is useful.
- But we must be open to the possibility that some efforts to promote open science may in fact stimulate questionable and unacceptable research practices.
- This would obviously be something the fora working to promote OS, OR and RI would have to look closer into.

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Openness and the ambiguity of 'open'

- 'Openness' is a key concept in the OS and OR agendas – as well as in the RRI agenda
- It and related words ('transparency') also occur frequently in the CoC
- Webster lists seventeen meanings of 'open', some not relevant here
- But enough to demonstrate the ambiguity of the concept

A two-dimensional approach

- The general idea is that 'open' implies absence of barrier(s).
- *Dimension 1*: specify the barriers. They can be of different kinds (legal, economic, physical, psychological or mental,...).
- *Dimension 2*: specify the strength. The barriers can be of variable strength (impossible, difficult, easy to eliminate, reduce, go around).
- Combinations possible

'Open' in the CoC often open

- An example is: “Researchers recognise and manage potential harms and risks relating to their research.” (2.4) But manage, how? This is left open.
- If we tacitly take for granted that we may add: “well”, “responsibly”, or “in a responsible way”, it is still left open what counts as responsible ways.
- Other paragraphs include clauses such as “where appropriate”, “when legitimately required to do so”, “when relevant”, ... without specifications.
- This is not intended as a criticism.

The two faces of openness

- Openness, two faces (or phases)
- Phase 1: remove barriers
- OA is an example; remove economic barriers to access
- But openness requires not just absence of barriers
- Phase 2: engagement with stakeholders
- Active engagement, dialogue, flexibility, willingness to adapt and change – as described in *RRI Tools. A Practical Guide to Responsible Research and Innovation*

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Next steps?

- The OS agenda covers a great number of highly specialized subareas and platforms, including
- RI, Open Access to scientific data, evaluation of research performance, next generation bibliometrics, future of scholarly communication, the European Open Science Cloud
- Here also complex legislation (including IPR, GDPR,....) is relevant. Task forces with specialists are needed in each of these areas.

Challenges

- On one hand a division of labour between specialized task forces is necessary.
- On the other hand, a holistic perspective is required to avoid clashes and tensions between recommendations proposed by these task forces.
- Harmonization between the recommendations proposed is desirable and will require good leadership and regular meetings.

For instance

- It is easy to be impressed by a formula like “open when possible, closed when necessary” – a formula that occurs both in the CoC and in the OS Policy Platform recommendations.
- But the real challenge is to clarify the precise conditions when data can be open, and when they need to be closed and protected.
- Neither ALLEA nor those responsible for the OR, RRI and OS Policy Platforms will be out of work – for a long time to come.
- The scientific landscape is not static. Updates will be required of the CoC as well as these policy platforms.