

U.S. National RRI-Practice Workshop Report

[Executive summary \(maximum half a page\)](#)

The U.S. workshop brought together 26 stakeholders from the U.S. federal government, private sector, civil society, and academia at Arizona State University. RRI was approached from a multiplicity of different perspectives, and used only as a term associated with the project, holding no clear or inherent meaning for the participants. Despite a noted lack of familiarity with the term, many of the areas targeted by the keys were discussed as centrally important to the work of the various organizations represented. Participants tended to focus on one or two areas or “keys” seen as most relevant to organizations’ activities, with little engagement across issues that might indicate a more holistic view of RRI. While there was some disagreement among the participants on the kinds and levels of intervention that efforts to foster responsibility should include, areas of overlap emerged, with a particular focus on improving public engagement and diversity, while opening institutionalized spaces for broader and more inclusive public deliberation. Institutional gaps in governance mechanisms and attendant risk associated with current research and innovation practices were also a focus of the group, although no clear pathways forward to address these issues were agreed on by the group. A general agreement that there is an urgent need to address serious issues associated with current research and innovation practices and cultures prevailed, and the group expressed interest in continued engagement on the topic.

[Introduction](#)

Arizona State University’s School for the Future of Innovation in Society hosted the U.S. national workshop on RRI-Practice on Monday, February 27th. The workshop took place on ASU’s Tempe campus, bringing together 26 stakeholders from the U.S. federal government, private sector, civil society, and academia.

Comments on participation based on national structures (e.g. why this NGO, policy, other group participation; what is missing, etc.)

The workshop assembled an appreciable group of experts, which nonetheless represented only a sample of potential US stakeholders in RRI. The invitation list included a larger number of US Federal Government and private sector representatives, which were two groups somewhat underrepresented in the workshop. The transitional and uncertain nature of federal agencies such as the EPA and FDA in the current political climate is a likely contributing factor to the underrepresentation of regulating agencies. During the workshop a lack of such traditionally “conservative” voices as clergy and conservative ethicists was also noted.

Despite these identified gaps, representation by two prominent research foundations, the National Academies of Science, Engineering and Medicine (NASEM), the National Science Foundation (NSF), The Joint Genome Institute of the Department of Energy and two large, vocal and visible NGO’s working on advocating for and improving how science is conducted complemented attendance by a large cohort of academic researchers from a variety of

disciplines. As such, the workshop brought some key representatives of an otherwise unmanageably large and diverse population together.

Understanding of responsibility and RRI

How is responsibility in research and innovation framed by the participants? Is there broad consensus on what is responsibility in science and innovation or did the participants' views differ considerably? How did this differ between different actors? Is the term RRI used at all? How? What do people understand by it?

Participants framed RRI in a diversity of ways, based on their differing concerns, approaches and orientations toward research and innovation. Much of this diversity probably stems from the lack of a coherent working definition of "RRI" in the mainstream US discourse, and correspondingly, among the gathered stakeholders. Since responsibility is a recognizable lay term carrying significant meaning, though, there were no shortages of engagement, materials, and approaches offered regarding how organizations are currently performing responsibility, and how they might make their work more responsible going forward. Thus, while the participants who gave presentations used the term RRI--in response to the prompts offered by the workshop itself--they were neither comfortable with nor conversant in what that might mean in a technical sense. Rather, it was common to attach RRI to a different more dominant discourse that these organizations were already trading in. For example, a private sector representative framed RRI in terms of corporate social responsibility (CSR) and shared value, noting that the company would not likely shift their language to using RRI as a dominant framework. Rather, the corporation will continue to incorporate the key principles of driving sustainable growth for the business while achieving tangible social impact within its existing CSR and integrated value framework. Thus, from the corporate side RRI is a key component of CSR; it is not a standalone strategy, while from civil society it became an opportunity to invite community level scientific partnerships and ethical deliberation on challenging technologies. Inside academia it became an invitation to think about educational values, cultures and practices, as well as inviting broader considerations about how communities, nations and the entire globe might go about reconceptualizing the role of innovation in shaping our sociotechnical worlds. From organizations engaged with funding, publication and intellectual property practices, RRI was understood to be creating better bureaucracies to shape and police behavior, ultimately creating better social outcomes. In this way the participating organizations each saw themselves as enacting responsibility, but these actions were deeply tied to existing core values of the organization. There was no robust articulation of something like all five keys, or a more process-based articulation of anticipation, inclusivity, reflexivity and responsiveness by any one organization.

Are the ideas and concepts that underpin RRI used by participants? If so, what terms are used? In what way is this context specific? Are any of the keys mentioned as aspects of responsibility?

Despite the diversity in approaches to RRI, many of the keys were central to the presentations offered by the participants. Returning to the example above, the private sector representative focused on gender equality and diversity more broadly, as represented by its workforce, emphasizing the company's ethic of transparency in its efforts to meet these goals.

Similarly, the Union of Concerned Scientists emphasized the importance of scientist-community partnerships, promoting a model of research in which communities take the lead in articulating scientific goals and trajectories rather than the other way around, and scientists remain engaged and supportive of community goals, even later in the stages of research and after projects have

finished and publications been submitted. This focus on public engagement was also highlighted by a genetics researcher from an academic research institution, who emphasized the importance of getting community buy-in and input for research projects before any lab work has been done, and in opening research proposals to critique by a range of disciplinarily trained scholars in order to identify possible pitfalls before investments in time and other resources have been undertaken. These approaches to RRI represent an active orientation toward public engagement, and a certain kind of open science ethic, interpreted broadly.

Representatives from academia focused heavily on science education, emphasizing authentic integration of ethics with scientific curricula, and the need for widespread cultural changes within organizations and the scientific disciplines. Inclusivity was also highlighted as important to scientific education, with an explicit rejection of “weeding out” philosophies, favoring instead pedagogical approaches that cater to different learning styles and forms of intelligence that may vary by class background etc.

In what way can the AIRR (Anticipative, Inclusive, Reflexive, Responsive) dimensions help to evaluate how participants are referring to RRI and related concepts, including emerging and broadening notions of responsibility?

Participants did not discuss this directly, but based on the unsystematic way in which they talked about RRI it would take a major effort to organize their thinking along AIRR and, given CSR, it would fall short with corporate participants in any event.

When presented with the project’s concept of RRI, what were the participants’ responses? How was responsibility in research and innovation defined? Where there differences between the participants?

The project’s concept of RRI was presented as relying primarily on the five keys--public engagement, open access, gender equality, science education and ethics. The keys were treated as a tractable starting point that opened many immediate areas of critique. One or two participants who were familiar with the keys asked about where the governance key went. Political institutions are better equipped at dealing with these kinds of complex questions that do not invite tidy answers, but demand continued attentiveness and deliberation. Governance must be central to any RRI framework.

Diversity was widely agreed to be a serious and surprising gap in the keys. At a minimum, race, ethnicity, sexuality, religion and class are missing, so this key might refer to inclusivity rather than to gender only. The meaning of such a general term still needs to be specified, though. Diversity in research training and practice is one thing, but diversity in research design is equally important. The way that science, historically, has served particular populations at direct cost to others needs to be attended to. Social justice and distributive justice are also partially diversity issues. The scientific community does gravitate toward some societal grand challenges (e.g., food scarcity), but others it deems intractable. This parsing of social problems into the scientifically tractable and intractable goes unexamined. Diversity is not merely the politics of who is in the room, but also the forms of sorting that are done in which certain communities are treated as able to make decisions for others, and in which particular questions get delimited as beyond the scope of scientific projects. Diversity should be treated as an epistemic virtue.

Another modification to the keys identified by the group is something like “Institutionalized Democratic Dissent.” This is less about covering representational bases on ethics boards than

challenging the range of imagination permitted in decision-making processes. The keys do not account for the forms of institutional mediation and stasis through which limited ranges of imagination become adopted, institutionalized and habituated – how frames are set or questions narrowed in the first place.

Open access should be interpreted broadly, not just in terms of post-publication, but in terms of an ethic of transparency in all stages of research, allowing preemptive interventions from the community level to scientific peers.

Some in the room encouraged a broader approach to RRI, going beyond micro-analyses of gender representation or education and addressing broader questions, such as considering the possibility that there might be areas of research that should not under any circumstances be pursued, how might we identify them, and who has a say? These were understood to be existential questions of great urgency, which the approach offered by the keys entirely side steps.

At what level (state, institutional level, individual researchers) did the participants tend to address responsibility in research and innovation?

The level at which RRI should be addressed was a topic of debate, with the overall gist that notions of responsibility and attendant changes to modes of thinking and acting have a place at a variety of levels—global; national; institutional, including publishing organizations, regulating agencies, and firms; as well as at the level of the lab and classroom.

This topic also generated some level of disagreement. From one perspective, the practicality of deliberation at the global level appeared out of reach. Here issues are said to seem more tractable at the local community level, such as soliciting consent for the environmental release of genetically altered organisms. The practice of having such a debate on the global level may seem unthinkable to many. The path forward associated with this view was a call for rolling out community level conversations more broadly, generalizing the community engagement model. As one researcher noted, “there are a lot of communities, and there are a lot of people looking for meaning and purpose. If we could offer the ability to influence technology, it might take off.”

From another perspective, this fine-grained approach missed the bigger picture. Some of the attendees highlighted the importance of being able to address long-term, more cumulative outcomes, such as those associated with the development and scaling up of—as well as the ultimate design of many cities around—the automobile. Engaging communities in conversations is important, but as another researcher argued, “doing so one gene drive at a time isn’t going to allow us to address questions around what the world might look like once we have engineered one billion species.”

What was identified as significant barriers, drivers and best practices to the further development of responsibility in research and innovation, to RRI (and potentially to the keys)?

The lack of an institutionalized or legally tractable definition of robust science was highlighted as a barrier to implementation of RRI. For example, witnesses at congressional hearings have to disclose the last three years of grant funding from the federal government but nothing about private funding, thus defining federal grants as the only conflict of interest of scientists testifying in front of Congress.

Barriers to public engagement we framed in terms of public participation fatigue, disinterest, lack of time and other class-based barriers. More generally, governance mechanisms do not seem adequate to the task of creating responsibility.

It was noted that capture of conversations on RRI and similar reform-minded efforts by liberals impoverishes the deliberation process and creates an impediment to broader social buy-in. Further, dichotomies of responsible vs. irresponsible and innovation vs. stagnation have the potential to create binaries that obscure a middle ground. Research often means we aren't sure what the outcome is. We may know there are areas we want to stay away from, but we don't want to confuse research and product development with product regulation. It was suggested that less dichotomous language than "responsible" (implying "irresponsible" as its counterpoint) might serve us better, allowing discussion of what is more or less "desirable," "undesirable" or "detrimental." The inherent uncertainty of outcomes should make us cautious about closing off avenues of research.

Other problems with public discourse around science were noted. The H5N1 case was an example: There were a lot of people ready to critique the way that the research was conceptualized and conducted if there was the opportunity to, but well respected scientific figures publicly discouraged discussion around the problems associated with such research. We can ask, is there research that ought not be done? Might we also articulate certain kinds of public assertions about science that ought not be made?

Some argued that the private sector shows lack of interest in being transparent or in taking up other responsibility dimensions. An example cited here was that of autonomous vehicles, a broad development backed by industry, with multiple areas of research and development that must be brought together to create these technologies. Even if we wanted to slow such developments it appears very difficult. Such privately funded projects with great transformational potential appear difficult to penetrate with RRI-type thinking.

[Reflections on the workshop process](#)

How easy was it to recruit people?

With 65 invitees and 26 attendees, attendance results are relatively high, given the lead-time and high level of the invitees. The guest list depended heavily on existing networks of the research group, without which recruitment would have been much more difficult.

How easy was the conversation; was there a degree of conflict to the discussions?

The conversation remained engaged and collegial. Strong disagreements were few, and were largely accepted as part of the natural terrain.

To what extent did the facilitator have to steer the discussion with specific questions (in contrast to an easy flow of discussion)?

Conversation was ample, and often flowed in several directions at once. This positioned the facilitator in the role of reigning in and focusing conversation more than trying to prompt or steer it.

Did the participants seem interested in the project's results?

The participants are interested in the projects results, as well as continued engagement on this topic. This is seen as the beginning of a conversation rather than the completion of an event.