

## 1. THE ORIGIN, OBJECTIVES, AND EVOLUTION OF THE WORLD CONFERENCES ON RESEARCH INTEGRITY

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### Abstract

The World Conferences on Research Integrity (WCRI) have grown over the past decade from a proposal to convene a joint U.S.–European conference on research integrity into a global effort to foster integrity in research through research, discussion, the harmonization of policies, and joint action. Over the course of the first four WCRI, held in Lisbon, Portugal, in 2007; Singapore in 2010; Montreal, Canada, in 2013; and Rio de Janeiro, Brazil, in 2015, participation has grown from 275 participants from 47 countries in 2007 to 474 participants from 48 countries in 2015. The WCRI have produced two global statements on research integrity: the Singapore Statement in 2010 and the Montreal Statement in 2013. In addition, three sets of proceedings and numerous papers and working reports archived on the WCRI website ([www.researchintegrity.org](http://www.researchintegrity.org)) are available. The WCRI effort celebrated its tenth anniversary at the Fifth WCRI in Amsterdam, May 28–31, 2017. A total of 836 participants from 52 countries attended.

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## 1.1. Introduction

In an ideal world, integrity should be a regular element of all aspects of research. In practice, it is too often a topic that gets attention when there is a crisis and then is put on the shelf until the next crisis arises. Thus, over the 40 or so years that research integrity has been a topic of public discussion, universities, professional societies, and governments have responded to crises, issued reports, and then, too often, moved on to other issues, hoping that no further crises would arise.

The World Conferences on Research Integrity have evolved into an ongoing forum for the study and discussion of ways to promote responsible behavior in research. This was not, however, the goal of the initial and somewhat audaciously titled “World Conference on Research Integrity” held in Portugal in 2007. The aim of the initial conference was more modest.

The World Conferences began as an experimental extension of the U.S. Office of Research Integrity’s (ORI) conference program to Europe. In 2000, ORI’s authority was “changed to focus more on preventing misconduct and promoting research integrity through expanded education programs” [*Federal Register*, 2000]. Under its new authority, ORI initiated programs aimed at improving researcher training and engaging researchers and professional organizations in the discussion of integrity in research. The conference program (small grants to organizations and institutions to organize conferences) was part of this effort. In 2006, a consultant working at ORI, Nicholas Steneck, University of Michigan, was heading to Europe for an academic meeting and suggested that he explore the possibility of holding a Europe–United States conference to discuss research integrity issues of common interest. The ORI Director, Chris Pascal, and the Director of the Division of Education and Integrity, Larry Rhoades, agreed to provide \$25,000 for this effort, with the understanding that a European partner be found to match ORI funding.

In 2006, a number of European countries and groups of European researchers were engaged in efforts to develop misconduct policies and otherwise promote integrity in research. However, most did not have enough funding to support a collaborative U.S.–European conference. In a series of meetings, World Conference initiator Steneck was assured of European interest in promoting integrity but received no commitment of support until one final meeting in Strasbourg with European Science Foundation (ESF) Chief Executive, Bertil Andersson.

While some countries had responded to research misconduct incidents at the national level, ESF was the first European organization to formally engage the topic of research integrity in its 2000 Science Policy Briefing, *Good Scientific Practice in Research and Scholarship* [ESF, 2000]. Andersson was deeply committed to taking an active role in promoting integrity in research and quickly agreed to match ORI’s funding. More importantly, he also agreed to take the lead in

seeking additional support in Europe, starting with the European Commission, and appointed an ESF consultant, Tony Mayer, to co-organize and co-chair the proposed joint U.S.–European conference on research integrity. From this agreement on, Co-Chairs Steneck and Mayer assumed major responsibility for securing funding and organizing the first World Conference on Research Integrity.

## 1.2. The First World Conference on Research Integrity

With strong encouragement from Andersson and colleagues consulted during the early planning process, Co-Chairs Steneck and Mayer broadened the U.S.–European plan to an International Conference for Fostering Responsible Research, justifying the effort in their unpublished planning report to the ESF and ORI as follows:

Research, which prides itself on its internal self-governance and its integrity, is now faced with a number of well publicized cases of misconduct, fraud and questionable research practices. The research community worldwide has to face this challenge in order to retain public confidence and establish clear best practice frameworks at an international level.

However, planning also included the need to address “questionable research methods and environments in which such methods are tolerated.” With these broad objectives in mind, the overall purpose of the first World Conference was

... to assemble an international group of researchers, research administrators from funding agencies and similar bodies, research organizations performing research, universities and policy makers for the purpose of discussing and making recommendations on ways to 1) improve, 2) harmonize, 3) publicize, and 4) make operationally effective international policies for the responsible conduct of research.

At roughly the same time that planning for the first WCRI began, two members of the Organization of Economic Cooperation and Development (OECD), Canada and Japan, proposed the development of a Working Group on research integrity, with the goal of producing recommendations for action by all OECD members [OECD, 2007]. Steneck and Mayer soon established a collaborative working relationship with this effort and also began working with the International Council of Science (ICSU), which was also interested in increasing attention to integrity by the global scientific community [ICSU, 2002]. And most importantly, through the efforts of Andersson and Mayer, the European Commission agreed to provide major support for the first WCRI and to encourage Portugal to host the Conference during its upcoming presidency of the European Union. Through these and other related developments, what became the founding WCRI was set for September 2007 in Lisbon, Portugal, at and with further support of the Gulbenkian Foundation headquarters.

Opening talks by the Portuguese Minister of Science, the late Jose-Mariano Gago, the European Commissioner of Research Janez Potocnik, and others, challenged participants to engage the issues through discussion and further

action. As summarized in the final report [*Mayer and Steneck, 2007*], over the 2.5 days of meetings, the 275 participants from 47 countries participated in “a series of plenary sessions, three working groups, formal opening and closing sessions, and other events designed to promote discussion and begin a global exchange about ways to foster responsible research practices.” More information on the first WCRI will be available on the World Conference for Research Integrity Foundation website: [researchintegrity.org](http://researchintegrity.org).

### **1.3. The Second World Conference on Research Integrity**

One of the outcomes of the first WCRI was support for convening a second global conference, with some preference for a country in the rapidly expanding Asian research world. Given that by the time of the first WCRI, both Andersson (as Provost) and Mayer had moved to the Nanyang Technological University (NTU) in Singapore, Singapore quickly became the logical site for the Second WCRI. The NTU is one of the two highly ranked, research intensive universities in the city state, the other being the National University of Singapore (NUS).

Working within the Singaporean system, Andersson and Mayer were able to mobilize substantial funding for the Second WCRI through the two major universities (NTU and NUS), the Singapore Management University (SMU), and the Agency for Science, Technology and Research (A\*STAR). All four institutions had high international research profiles and recognized the importance of carrying out research to the highest standards of integrity. In addition to these organizations, the Ministry of Education provided significant extra funding. The organizers also had the financial support of a number of other organizations, including the Committee on Publication Ethics (COPE), which has supported every WCRI held to date. The level of funding achieved enabled not only the support for the conference program but also provided the wherewithal for Co-Chairs Steneck and Mayer to offer modest travel grants to participants from disadvantaged countries. This was an important development in the transformation of research integrity into a global issue.

The Second WCRI was a truly global event with more than 340 participants from 51 countries attending. Building on the results of the first WCRI, the Second WCRI focused on national and international structures for promoting integrity and responding to misconduct, global codes of conduct and best practices for research, common curricula for training students and researchers in best practices, and uniform best practices for editors and publishers [*Mayer and Steneck, 2012*].

During planning for the Second WCRI, Steneck proposed developing some lasting legacy from the conference, such as a global code of conduct for research. With Planning Committee support, Steneck, Mayer, and Melissa Anderson, University of Minnesota, took the lead in drafting the *Singapore Statement on Research Integrity* (Box 1.1). A draft *Singapore Statement* was sent to all

## Box 1.1 The Singapore Statement on Research Integrity.

**Preamble.** The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

### Principles

**Honesty** in all aspects of research

**Accountability** in the conduct of research

**Professional courtesy and fairness** in working with others

**Good stewardship** of research on behalf of others

### Responsibilities

1. **Integrity:** Researchers should take responsibility for the trustworthiness of their research.
2. **Adherence to Regulations:** Researchers should be aware of and adhere to regulations and policies related to research.
3. **Research Methods:** Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence, and report findings and interpretations fully and objectively.
4. **Research Records:** Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others.
5. **Research Findings:** Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.
6. **Authorship:** Researchers should take responsibility for their contributions to all publications, funding applications, reports, and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.
7. **Publication Acknowledgement:** Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research but do not meet authorship criteria, including writers, funders, sponsors, and others.
8. **Peer Review:** Researchers should provide fair, prompt, and rigorous evaluations and respect confidentiality when reviewing others' work.

9. **Conflict of Interest:** Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications, and public communications as well as in all review activities.
10. **Public Communication:** Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views.
11. **Reporting Irresponsible Research Practices:** Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification, or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods.
12. **Responding to Irresponsible Research Practices:** Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of misconduct and other irresponsible research practices and for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record.
13. **Research Environments:** Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity.
14. **Societal Considerations:** Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.

participants prior to the conference and became an underlying theme for much of the discussion during the meeting. This effort paralleled the ESF/All European Academies (ALLEA) initiative to develop a *European Code of Conduct on Research Integrity* [ESF/ALLEA, 2011]. At the closing session, participants acting as individuals rather than as institutional representatives discussed the few areas where there were differences of opinion about coverage and/or wording. Finding proper wording for Responsibility 14, Social Considerations, took the most time. At the end of the session, those present broadly endorsed the code, pending a few minor revisions. These revisions were made after the Second WCRI

and sent to all participants for comments and approval. The final 4 principles and 14 responsibilities set out in the *Singapore Statement* were then posted on the Web and have since been translated into 27 languages [*Singapore Statement*, 2010].

The Second WCRI achieved its objective to consolidate the work of the first WCRI and set the pattern for an ongoing series of World Conferences on Research Integrity. Having held meetings in Europe and Asia, consideration was given to other major regions. Steneck and Mayer also wanted to bring in new leadership and turned to Melissa Anderson to take on organizing and chairing responsibilities. She quickly brought in Sabine Kleinert, from *The Lancet*, to continue the practice of having conference co-organizers and co-chairs. Exchanges between the new conference Co-Chairs and the Conference Services Office of the National Research Council Canada confirmed a mutual interest in siting the conference in Montréal, Canada, in May 2013 and established a financial mechanism for support through the council's practice of funding conferences on a reimbursement basis.

#### **1.4. The Third World Conference on Research Integrity**

The Third WCRI continued the practice of previous conferences in engaging government officials, publishers, and leaders in policy and education, but it also intentionally recruited participants who were actively conducting research on or relating to the responsible conduct of research. A broad search through publications in the field yielded a list of hundreds of scholars who had recently published research on research integrity. To encourage their participation, Anderson and Kleinert issued a broad call for presentation proposals. The many presentation proposals received in response to this call led to the decision to expand the conference from 2.5 to 3 full days. Attendance at the Third WCRI grew to 366 participants from 44 countries.

Building on the success of the workshops that concluded the Second WCRI, the Third WCRI incorporated four tracks of focused discussions on the following topics: integrity in international research collaborations, cooperation between research institutions and journals in cases of suspected misconduct, education in the responsible conduct of research, and research integrity in relation to societal responsibility [*Steneck et al.*, 2015]. The track related to international research collaborations was devoted to discussion of a draft document that was eventually published as the *Montréal Statement on Research Integrity in Cross-Boundary Research Collaborations* [2013]. The *Montréal Statement* (Box 1.2) is intended to serve as a companion document to the *Singapore Statement*. The 20-point document focuses on aspects of research integrity that have particular relevance to collaborative research that crosses national, institutional, disciplinary, or sector boundaries (the last representing, for example, public-private or academy-business collaborations). It is now available in 14 different languages.

## Box 1.2 The Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations.

**Preamble.** Research collaborations that cross national, institutional, disciplinary, and sector boundaries are important to the advancement of knowledge worldwide. Such collaborations present special challenges for the responsible conduct of research because they may involve substantial differences in regulatory and legal systems, organizational and funding structures, research cultures, and approaches to training. It is critically important, therefore, that researchers be aware of and able to address such differences, as well as issues related to integrity that might arise in cross-boundary research collaborations. Researchers should adhere to the professional responsibilities set forth in the *Singapore Statement on Research Integrity*. In addition, the following responsibilities are particularly relevant to collaborating partners at the individual and institutional levels and fundamental to the integrity of collaborative research. Fostering the integrity of collaborative research is the responsibility of all individual and institutional partners.

### **Responsibilities of Individual and Institutional Partners in Cross-Boundary Research Collaborations**

#### **General Collaborative Responsibilities**

1. **Integrity.** Collaborating partners should take collective responsibility for the trustworthiness of the overall collaborative research and individual responsibility for the trustworthiness of their own contributions.
2. **Trust.** The behavior of each collaborating partner should be worthy of the trust of all other partners. Responsibility for establishing and maintaining this level of trust lies with all collaborating partners.
3. **Purpose.** Collaborative research should be initiated and conducted for purposes that advance knowledge to the benefit of humankind.
4. **Goals.** Collaborating partners should agree at the outset on the goals of the research. Changes in goals should be negotiated and agreed to by all partners.

#### **Responsibilities in Managing the Collaboration**

5. **Communication.** Collaborating partners should communicate with each other as frequently and openly as necessary to foster full, mutual understanding of the research.
6. **Agreements.** Agreements that govern collaborative research should be understood and ratified by all collaborating partners. Agreements that

unduly or unnecessarily restrict dissemination of data, findings, or other research products should be avoided.

7. **Compliance with Laws, Policies, and Regulations.** The collaboration as a whole should be in compliance with all laws, policies, and regulations to which it is subject. Collaborating partners should promptly determine how to address conflicting laws, policies, or regulations that apply to the research.
8. **Costs and Rewards.** The costs and rewards of collaborative research should be distributed fairly among collaborating partners.
9. **Transparency.** Collaborative research should be conducted and its results disseminated transparently and honestly, with as much openness as possible under existing agreements. Sources of funding should be fully and openly declared.
10. **Resource Management.** Collaborating partners should use human, animal, financial, and other resources responsibly.
11. **Monitoring.** Collaborating partners should monitor the progress of research projects to foster the integrity and the timely completion and dissemination of the work.

### **Responsibilities in Collaborative Relationships**

12. **Roles and Responsibilities.** Collaborating partners should come to mutual understandings about their roles and responsibilities in the planning, conduct, and dissemination of research. Such understandings should be renegotiated when roles or responsibilities change.
13. **Customary Practices and Assumptions.** Collaborating partners should openly discuss their customary practices and assumptions related to the research. Diversity of perspectives, expertise, and methods, and differences in customary practices, standards, and assumptions that could compromise the integrity of the research should be addressed openly.
14. **Conflict.** Collaborating partners should seek prompt resolution of conflicts, disagreements, and misunderstandings at the individual or institutional level.
15. **Authority of Representation.** Collaborating partners should come to agreement on who has authority to speak on behalf of the collaboration.

### **Responsibilities for Outcomes of Research**

16. **Data, Intellectual Property, and Research Records.** Collaborating partners should come to agreement, at the outset and later as needed, on the use, management, sharing, and ownership of data, intellectual property, and research records.

17. **Publication.** Collaborating partners should come to agreement, at the outset and later as needed, on how publication and other dissemination decisions will be made.
18. **Authorship and Acknowledgement.** Collaborating partners should come to agreement, at the outset and later as needed, on standards for authorship and acknowledgement of joint research products. The contributions of all partners, especially junior partners, should receive full and appropriate recognition. Publications and other products should state the contributions of all contributing parties.
19. **Responding to Irresponsible Research Practices.** The collaboration as a whole should have procedures in place for responding to allegations of misconduct or other irresponsible research practice by any of its members. Collaborating partners should promptly take appropriate action when misconduct or other irresponsible research practice by any partner is suspected or confirmed.
20. **Accountability.** Collaborating partners should be accountable to each other, to funders, and to other stakeholders in the accomplishment of the research.

## 1.5. Recent and Future Conferences

During the Third WCRI, Steneck, Mayer, Anderson, and Kleinert agreed to work together as a steering committee to assure the continuity of the WCRI effort. Their first task was to review proposals from several countries that had responded to a call for bids to host the Fourth WCRI. Brazil was selected as the site for the next conference, under the local leadership of Sonia Vasconcelos, Edson Watanabe, and Martha Sorenson of the Federal University of Rio de Janeiro. The selection of Rio de Janeiro brought the World Conferences to South America, with the goal of encouraging participation from countries that had previously been underrepresented. Representatives from 48 countries participated, with total conference participation of 474.

The theme of the Fourth WCRI was “Research Rewards and Integrity: Improving Systems to Promote Responsible Research.” It was expressed not only in the plenary sessions but also in focus tracks that addressed the relationships between research integrity and systems represented by funders, countries, and research institutions. The conference continued to attract decision makers, publishers, and researchers, in a somewhat greater spread in their experiential bases. Some countries had made considerable strides in policy development, oversight, and education in the responsible conduct of research. They brought to the Fourth WCRI relatively well-developed models of programs, documents, and instructional programs. Other countries represented at the Fourth WCRI were at earlier

stages in their efforts to foster research integrity. In some cases, delegates from these latter countries illustrated ways in which integrity initiatives were developing along lines that diverged somewhat from earlier models, showing how important local context is to policy, instruction, and oversight related to research integrity. Selected papers from the Conference were published as: *Proceedings of the 4th World Conference on Research Integrity* [2016].

Continuing the tradition of naming the next site at each meeting, the bid submitted by a team organized by Lex Bouter, Vrije Universiteit Amsterdam, was warmly accepted, with the Fifth WCRI held in late May 2017 in Amsterdam. Information on the Fifth WCRI can be found at <http://www.wcri2017.org> The Conference was co-chaired by Steneck, Mayer, and Bouter and mark the 10th anniversary of the WCRI effort and the founding conference in Europe. In Rio, the Steering Committee also added Susan Zimmerman, Secretariat on Responsible Conduct of Research, Canada, and Sonia Vasconcelos, to its membership as representatives of the countries hosting the Third WCRI and the Fourth WCRI, respectively.

During the Fifth WCRI, the Steering Committee met and made the decision to establish the World Conferences on Research Integrity Foundation to coordinate future planning. The new Foundation is led by Board Chair Lex Bouter. The Steering Committee also accepted a bid for the 6th World Conference in 2019 to be hosted by Hong Kong and organised jointly by WCRIF, Hong Kong and Australia. Further information on these and other efforts will be available on the Foundation website, [researchintegrity.org](http://researchintegrity.org).

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## 14 Scientific Integrity and Ethics in the Geosciences

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