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## Responsible Research Conduct

LAST MONTH, THE INTERACADEMY COUNCIL (IAC) AND THE INTERACADEMY PANEL (IAP), THE GLOBAL network of science academies, released a report on responsible behavior in science.\* The recommendations of the committee, which we chaired, were inspired by several trends in today's research environment that have made it an exciting time to do research, but have also made science a more complicated enterprise, raising concerns about ethical conduct and values.

By working collaboratively, researchers can hope to answer questions never addressed before, including those with substantial influence on society. At the same time, today's international, interdisciplinary, team-oriented, and technology-intensive research has created an environment more fraught with the potential for error and distortion. Technology makes it easier to plagiarize or manipulate data in misleading ways. Researchers collaborating on interdisciplinary problems in different countries may have varied ethical perceptions due to differences in disciplines as well as legal traditions and cultures. The increasing pressure on scientists to publish in high-impact journals to drive favorable hiring and promotion decisions also creates incentives for misconduct.

Establishing codes of conduct in science is not new: National and international organizations have issued a range of guidelines to ensure responsible conduct in research.† The goal of the IAC-IAP committee was to establish principles that transcend disciplinary or national boundaries. The project began with seven fundamental values that apply universally in scientific research as well as in daily life: honesty, fairness, objectivity, reliability, skepticism, accountability, and openness. Based on these values, our committee specified principles that apply at different stages of the research process, from the development of the research plan to the reporting of results. The responsibilities not only of scientists but also of institutions in the research enterprise are described in detail. For example, research organizations must establish mechanisms for addressing allegations of irresponsible behavior and for protecting whistleblowers, with ombudsmen or designated agencies that researchers can consult when concerns or questions arise. Scientific journals must make retractions highly visible to minimize the continuing citation of retracted material. And we strongly suggest the establishment of independent oversight bodies to guard against face-saving cover-ups by institutions.

Our committee also emphasizes the role of national academies as forceful leaders on all issues involving responsible conduct in research. They are not only prestigious but also independent organizations involved in research issues. Thus, they have the responsibility to establish and disseminate the necessary standards of ethical scientific conduct. The direct involvement of national academies should bolster the efforts of research organizations to remain rigorous in enforcing standards, while counteracting the temptation of institutions to downplay instances of misconduct. The report also examines the contentious distinction between research and advocacy, recently highlighted by the publication of controversial research concerning the potential dangers of genetically modified corn.‡ Researchers have the right to express their opinions and seek to influence public policy. But they need to be careful to distinguish between their roles as specialists and as advocates. Those who choose to be advocates have a responsibility to themselves and to the research community to be transparent about the financial support they receive for the statements they make, as well as about any conflict of interests.

The IAC-IAP report and similar efforts, such as the statement released in 2010 by the 2nd World Conference on Research Integrity,§ are just the initial steps toward a truly global set of standards for the research community. They not only chart areas of widespread agreement but also point to the important issues that remain to be resolved to establish consistent expectations for researchers worldwide.

– Indira Nath and Ernst-Ludwig Winnacker

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\*[www.interacademies.net/10878/19787.aspx](http://www.interacademies.net/10878/19787.aspx). †[www.allea.org/Pages/ALL/24/581.bGFuZz1FTkc.html](http://www.allea.org/Pages/ALL/24/581.bGFuZz1FTkc.html). ‡G.-E. Seralini *et al.*, *Food Chem. Tox.* **50**, 4221 (2012); <http://scim.ag/FranceGM>. §[www.singaporestatement.org](http://www.singaporestatement.org).

