

Summa cum fraude: how to prevent scientific misconduct

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Scientific integrity has always been a critical issue in performing research. Recently, alarming signals from China have reached the academic community in the USA and Europe about scientific misconduct. One of the most respected newspapers in our country (NRC Handelsblad, 11 December 2010) reported that at least one third of leading scientists (2000 out of 6000) allied to one of the six major Chinese Universities has been involved in scientific misconduct such as plagiarism, data fabrication and data manipulation. Not only in China, but in almost every country, there are clear examples of scientific fraud in the university setting [1].

Research misconduct may appear in many ways: fabrication, falsification, plagiarism, manipulation, failure to meet clear ethical and legal requirements, improper dealing, and misdemeanors. Based on this phenomenon, a European Code of Conduct for research integrity was put forward in June 2010 by the European Science Foundation (ESF). The ESF is an independent, non-governmental organisation, the members of which are 79 national funding agencies, research performing agencies, academies and learned societies from 30 countries within Europe. The European Code has been fully endorsed by the National Organ for Scientific Integrity (LOWI), a Committee of the Royal Dutch Academy of Arts and Sciences (KNAW, www.knaw.nl) [2]. The principles of the Code include: honesty in communication, reliability in performing research, objectivity, impartiality and independence, openness and accessibility, duty of care, fairness in providing references and giving credit, and responsibility for the scientists and

researchers of the future. The European Code has installed new guidelines for good research practice (GRP). They include (1) data practices, (2) research procedures, (3) responsibility, (4) publication-related conduct, and (5) editorial responsibility.

With particular emphasis on GRP for scientific journals, crucial issues such as publication-related conduct and editorial responsibility are more extensively described below. This information was directly derived from the European Code of Conduct for Research Integrity and can be found at www.esf.org/activities/mo-fora/research-integrity.html

Publication Results should be published in an open, transparent and accurate manner, at the earliest possible time, unless intellectual property considerations justify delay. All authors, unless otherwise specified, should be fully responsible for the content of publication. Guest authorship and ghost authorship are not acceptable. The criteria for establishing the sequence of authors should be agreed by all, ideally at the start of the project. Contributions by collaborators and assistants should be acknowledged, with their permission. All authors should declare any conflict of interest. Intellectual contributions of others should be acknowledged and correctly cited. Honesty and accuracy should be maintained in communication with the public and the popular media. Financial and other support for research should be acknowledged.

Editorial Responsibility An editor or reviewer with a potential conflict of interest should withdraw from involvement with a given publication or disclose the conflict to the readership. Reviewers should provide accurate, objective, substantiated and justifiable assessments, and maintain confidentiality. Reviewers should not, without permission, make use of material in submitted manuscripts. Reviewers

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who consider applications for funding, or applications by individuals for appointment or promotion or other recognition, should observe the same guidelines.

In cardiovascular medicine, the above-mentioned publication and editorial-conduct issues have been widely recognised by both the Heart Editors Action Round Table (HEART) group and the European Society of Cardiology (ESC) through the Editors-in-Chief of the cardiovascular journals belonging to the ESC National Societies. The HEART Group (www.heartgroupjournals.org) consists of the Editors-in-Chief of the major international cardiovascular journals and has produced a document (*Statement on Ethics*) that addresses general ethical principles in the conduct of the scientific process with which all of the editors concur [3]. This Statement was simultaneously published (2008) in all other major cardiovascular journals including the Netherlands Heart Journal [4]. The HEART Group is particularly alert to discovering scientific fraud and data falsification, redundant or duplicate publication, and plagiarism. Publishing ‘*expression of concern*’ notes or even retraction of published material should be considered. *Salami slicing* and *shot gunning* publication strategies have to be strongly discouraged.

Within Europe, the ESC has established an Editor’s Network of all National Society Cardiovascular Journals (NSCJ). One of the major objectives of the Editor’s Network is to devise means to improve the scientific standards of the NSCJ. Scientific content, quality requirements, credibility, and editorial and research ethics will be promoted [5, 6]. To further preserve scientific credibility, NSCJ editors should harmonise their policies regarding scientific misconduct and scientific fraud. Secondary publications, even in different languages, should follow the requirements of the International Committee of Medical Journal Editors (ICMJE). Both the HEART Group and the ESC Editor’s Network mandate to adhere to the ICMJE-edited ‘Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication’.

In October 2009, ICMJE developed an electronic uniform disclosure form to avoid confusion for authors,

readers and the public. The creation of a uniform form was based on the great variability in the processes that different journals use to ask about and report authors’ potential conflicts of interest. The new form is currently available on the ICMJE website (www.icmje.org) and the websites of the member journals. The glossary and instructions will be available on the website in the next few months, and translations will be posted on the ICMJE website as they become available. The ICMJE will consider comments received before 1 May 2011, when the next iteration of the uniform conflict of interest disclosure form is prepared [7]. It is hoped that all scientific journals will adopt the new 2011 version of the uniform disclosure form in order to prevent conflicts of interest and, more importantly, thereby avoid scientific misconduct.

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