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1 Synopsis

More and more frequently, research article authors indicate how each author contributed to the research and/or research article. These *author contribution statements* are a commendable practice that benefits science in general. They (i) make sure that interdisciplinary research remains feasible by demarcating responsibilities; (ii) contribute to a fair assessment of researchers and (iii) discourage questionable authorship practices such as honorary authorship. The Flemish Commission for Research Integrity (VCWI) advises research institutions to promote *author contribution statements* as a standard practice through guidelines, training and institution repositories.

2 What is an *author contribution statement*?

An *author contribution statement* is a specification of the contributions (responsibilities) of the different authors in the emergence of a manuscript. The statement clarifies who and to which extent someone was responsible for, for instance, the formulation of hypotheses, the cogitation of the research, the collection of data, the data analysis, the interpretation of data and writing the article. Some journals request authors to fill out and submit such a statement which is then also published as a section of the article. With regard to customs and the degree of detail (of such statements), there are important differences between disciplines.

3 Added value of *author contribution statements*

The essence of an *author contribution statement* is to provide increased transparency about the authors' contributions and an open communication about the responsibilities relating to efforts put into the paper. The added value of this transparency is threefold.

- **The limitation of responsibilities, especially with regard to interdisciplinary research.** The European Code of Conduct for Research Integrity (ALLEA, 2017) states: "*All authors are fully responsible for the content of a publication, unless otherwise specified.*" The interdisciplinary character of scientific research keeps increasing and the average number of authors contributing to a paper has risen in almost all disciplines. The idea that all authors retain full responsibility is not tenable in interdisciplinary research. By making the contributions explicit, the merits and accountability become more attuned and more accurately distributed between authors. Whenever (integrity) questions rise about the work, the *author contributions* clarify who should be able to answer them and who cannot be held accountable. Only in this way will researchers remain to be able to participate in interdisciplinary research without an untenable accountability.

- **Fair researchers' assessments.** Authorship of research output is clearly the most prominent measurable indicator of academic merit. It plays an important role in the application of research funds, tenures (post-doc or professor) and other promotions within the academic hierarchy. The specification of contributions allows for a more attuned judgement about merits than mere authorship and the order of authors do (of which the latter is moreover multi-interpretable and not standardised throughout disciplines). Moreover, the binary criterion is more susceptible to manipulation (*gaming*). Assessment committees that take the time can, thanks to *author contributions*, judge and compare more fairly. This will only work under the premise that all researchers demonstrate a similar transparency about their contributions.
- **Reducing questionable authorship practices such as honorary authorship.** Grating authorship to persons who have not or hardly contributed to a research project or an article is a questionable practice that occurs in different forms: *gift authorship* (as acknowledgement or compensation), *guest authorship* (unjustifiedly inserting of, for instance, a head of department), *honorary authorship* (adding prestigious names), *mutual support authorship* (two authors inserting each other in eachother's work), etc. The claim to specify authors contributions causes a certain hurdle for these practices: a truthful *author contribution statement* is prone to debunk unjustified authors, and inventing authorship roles for non-contributing authors requires a deliberate lie. Similarly, *ghost authorship*, which refers to not listing certain contributors who would in fact meet the authorship criteria, becomes more difficult, at least when a crucial research contribution is not attributed to an author in the list of author contributions.

4 Application

Many journals ask authors to specify their contributions when submitting a manuscript. It is then the corresponding author's responsibility to make sure that all authors agree to the description. *The Lancet* made contribution statements mandatory in 1997 and was followed by many other journals, though mainly in the field of biomedics. The *Nature*-journals enabled *author contribution statements* from 1999 and transformed it to an obligation in 2009 since contribution statement submissions kept on rising and, in part, so as to reduce honorary authorship.

Authors can often choose themselves how detailed they make their authorship contribution statement. In some disciplines it is customary to mark all stages as group contributions. Most importantly, each author has a role that justifies authorship.¹

CRedit (*Contributor Roles Taxonomy*) is an open taxonomy of authorship roles that is developed to describe authorship contributions to research articles in a standardised way. (<https://casrai.org/credit/>)

In 2017 the editors of leading journals advised the scientific community to always describe the responsibilities of authors by making use of the CRedit-taxonomy – both with regard to the articles themselves and in their metadata, linked to ORCID.

¹ Corresponding to prevailing criteria, such as set by the [International Committee of Medical Journal Editors](#) and the [American Psychological Associations](#).

5 Advice of the VCWI

Given the numerous advantages and the limited disadvantages, the VCWI firmly supports the practice of *author contribution statements* and encourages their thorough application. In particular, the VCWI advises scientific institutions to promote authorship contributions statements as a standardised practice, by (among others) ...

- ... referring to *author contribution statements* in their institutional authorship guidelines as a good practice, to recommending them and communicating this to researchers;
- ... shedding light on (the good practice of) *author contribution statements* in the training of junior researchers, next to naming criteria and guidelines with regard to authorship;
- ... providing the possibility to explicitly list authorship contributions in the institution's repositories – it could make sense to adopt the CRediT-standard.



Vlaamse Commissie voor
Wetenschappelijke Integriteit
Flemish Commission for Research Integrity

The VCWI oversees research integrity in Flanders (Belgium). This body of nine professors has a twofold advisory function: general advice (such as this one) and second advice on cases that have previously been handled by the CRI of an institution. In 2020, 20 institutions recognize the advisory role of the VCWI. The VCWI is a member of ENRIO, the European Network of Research Integrity Offices.

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