Fair Authorship Guidance for CVS

Background. Authorship/publications are the "currency" of a research career, particularly in the early stages, both for academics and, increasingly, for those in technical or other research support roles. Furthermore, clearly delineating who is responsible for published research is central to scientific integrity. Authorship disputes sometimes arise because of a lack of awareness of relevant guidelines and conventions. The CVS Research Integrity Team has assembled this guidance to assist senior authors and their co-authors by setting out expectations, promoting best practice and encouraging a fair publication approach.

Good practice regarding Authorship has been described in The UK Research Integrity Office (UKRIO) "Good Practice in Research: Authorship" document, in accordance with the UKRIO Code of Practice for Research: Promoting Good Practice and Preventing Misconduct. It is also recommended that ORCID is used (Open Research and Contributor ID) to ensure that the author's work is recognised and not confused with the work of other individuals of the same name.

1. Basic Principles

1.1. Authorship disputes can often be avoided if **criteria for authorship and order of listing are agreed at the research planning stage**, especially for collaborative or inter-disciplinary research. The UKRIO recommends documenting such agreements as a routine part of research planning and documentation.

Normally, the first draft of a manuscript should list authorship and acknowledgements (for contributions/work that do not meet criteria for authorship). Authorship, including the order of listing, should normally be decided by the first and/or senior author/PI in consultation with the other authors who should be given an opportunity to comment/discuss any concerns over authorship. All authors should agree the final version of a submitted manuscript.

2. Criteria for Authorship

2.1. UKRIO guidance states that "authorship should be restricted to those contributors and collaborators who have made a significant intellectual or practical contribution to the work. No person who fulfils the criteria for authorship should be excluded from the submitted work". A set of useful criteria are recommended by the International Committee of Medical Journal Editors. **A guiding principle for authorship should be: "Could this manuscript have been produced in its current state without this person's contribution (irrespective of the role/job group/grade of the person involved)?"**. The work of contributors who do not meet the criteria for authorship should be listed in the acknowledgements section. In 1997, the British Medical Journal made a case for redefining authorship as "contributorship" (Pubmed 9314747) in recognition that contributions to research do not necessarily involve co-writing (co-authoring) a manuscript.

2.2. It is expected that author order reflects the extent of the contribution of each author. Where two or more authors have made an equal contribution, this can be indicated with a footnote.

2.3. The CRediT (contributor roles taxonomy) system is a useful tool to define contributions to a manuscript and can aid in deciding what merits authorship. This can be included at the end of the manuscript in a section entitled "author contributions". Increasingly, journals require a statement of author contributions. CVS strongly encourages the use of the CRedIT system in all manuscripts. If journal word constraints prevent this, then it is recommended that it be included in all drafts up to final submission, for internal records as a routine part of research documentation.

2.4. Publications from CVS should adhere to the CMVM fair publication policy concerning contributions of technical staff and core facilities to research publications. An explanation of the importance of this to careers of core staff can be found here. Some examples of co-authorship of core facility staff, where staff have contributed to – or led – method development or provided a bespoke service can be found here and here; where core facility staff are named in acknowledgements can be found here; and where the core facility is acknowledged, eg for a routine service that is offered elsewhere too, here.

2.5. Some clinical studies have many contributors/authors, sometimes exceeding journal limits. In this case, consider including a statement in the author list "on behalf of ... team", with the team listed on a drop-down menu or elsewhere in the manuscript (as per this exemplar). Ideally, this approach should be discussed and agreed by the research team at the planning stage. All contributors should be included if they meet the criteria for authorship irrespective of job category or career stage.

2.6. Authorship requires accepting responsibility for the material published.

2.7. Seniority (eg Head of Department), supervision/line management of one of the contributors, referral of patients, ownership of equipment or published datasets, in themselves, do not meet the normally accepted criteria for authorship. These contributions can be listed in the Acknowledgements section. Please see 2.8, below, for the secondary use/analysis of datasets already collected and published.

2.8. Secondary use of data in itself does not merit authorship by the provider of the dataset. Most funders and journals have policies encouraging data sharing (example: Transparency and Openness Promotion TOP). Upon publication, data and methods are usually made available in the paper, by request or through repositories. For example, raw and processed sequencing data can be deposited to the Gene Expression Omnibus (GEO) or Sequence Read Archive (SRA) database (mandatory for some journals). CVS recommendation for the secondary use of data is the citation of the original study and authorship should not be claimed by only providing the published data.

2.9. Authorship is voluntary. A person may not feel they have made a sufficient contribution to a manuscript or do not want (personally, or for UoE) to be associated with poor quality research. Be alert for "gift/guest/honorary" authorship where authorship is offered to a respected researcher to increase the chance of acceptance of a manuscript.

2.10. If there is a change in direction or hypothesis of the ongoing research or of the “story” during drafting of a manuscript that affects authorship and/or order, this should be discussed and documented (eg by email). It might be helpful to consider: Was this experiment part of the initial hypothesis? Did this experiment help to refute a hypothesis/

redefine a new hypothesis? If so, the person is likely to have made an intellectual contribution and merits co-authorship. If the data are to be published elsewhere, then authorship is unlikely to be merited.

2.11. When someone leaves the lab and the work is taken on by someone else, the CRedIT taxonomy should be used to help resolve contributions. It is not acceptable to promise first authorship as an incentive, for example, to complete a piece of work, if the contribution does not merit first authorship and a change in authorship has not been discussed and agreed with all those affected.

2.12. The UoE policy on Disclosure of Intimate Relationships sets out basic expectations regarding disclosure. Conflicts of interest can arise if any of the authors are in an intimate or family relationship with the senior author. If that is the case, the senior author should request the disclosure manager (as defined in the policy) to email all authors to ask agreement/raise any concerns with the authorship, preferably at the first draft stage, but definitely at least a week prior to submission.

3. Addressing authorship disputes

These usually fall into 3 categories:
- guest/gift authorship
- ghost authorship or denial of authorship
- disagreements about author order

It is preferable that disputes over authorship are resolved internally, by the authors, if possible. However, some researchers may feel unable to challenge authorship decisions made by a senior colleague. If resolution is not possible or if there are concerns over authorship, the matter can be discussed with the Convenor or any member of the CVS Research Integrity Team for advice and, if appropriate, signposting to relevant help (eg College Research Office; HR) and/or arbitration (in consultation with HR). All discussions will be treated confidentially.

Some types of authorship problem may constitute research misconduct. CMVM policy and guidance on Research Ethics and Integrity and what constitutes Research Misconduct and how to report it can be found here. When allegations are of a serious nature or where mediation/arbitration has been unsuccessful or refused, a formal process can be started (grievance/misconduct investigation).

Some authorship problems become apparent after publication, and may arise from a genuine misunderstanding, poor communication, different expectations or more serious reasons. If post-publication, the authors or UoE may need to contact the Journal where the work was published to correct the record. Further guidance on this is provided in the UKRIO "Good Practice in Research: Authorship" document.

Check list: consider

1. Research planning stage: agree criteria for authorship and order of listing.

2. First draft of manuscript to include authorship and order. All authors to be informed, senior author/PI to provide opportunity for discussion.
3. Check against CMVM Fair Publication Policy.
4. Define author contributions according to CRediT taxonomy (or equivalent).
5. All authors to approve final submission.

Finally, if you are not sure about who should be included as a co-author or the order of listing, please discuss it with a member of the Research Integrity Team and we can give you advice or point you in the direction of further advice.

Scenarios for discussion

The following illustrate the types of situations that can arise, loosely based on real world experience, and may be useful in small group discussions (eg lab meetings or in researcher networks). If you find resources that are useful in discussing how to resolve these situations, please let us know!

A. A technician has supported a student and a postdoc in the group in their experiments, playing a role in optimising the methodology, covering weekend and holiday periods and providing data to the student and postdoc. The postdoc includes the technician as an author on the first draft of the manuscript, but the technician is subsequently removed from the author list by the group leader and acknowledged instead. The technician feels the group leader hasn't appreciated her involvement and contribution, but the group leader defends the position saying that technicians are only exceptionally included as authors if they contribute intellectually to the project.

Issues

1. Do all contributions necessarily involve intellectual input?
2. How to balance contributions when a researcher's role involves supporting others?

Reflections

1. Importance of team working
2. Recognition of contribution with authorship vs acknowledgement?

Resources

- The CMVM fair publication policy
- Article in the BMJ: Authorship is dead: Long live contributorship

B. A postdoc has worked for 2 years on cellular modelling of a human disease, in a project based on genetic findings in humans. When the paper is finally put together, she is upset to find herself sharing first authorship with a postdoc from the genetics lab that made the initial observation. She also notes a significant number of referring clinicians included in the author list.

Issues:

1. How to represent referring clinicians most fairly (consortium etc)
2. How to balance recognition for a primary observation upon which a study is founded and the much larger body of work undertaken to follow up?
3. How to balance individual fairness with “political” considerations in sharing authorship between 2 labs in what may be part of a longer standing collaboration

Reflections

1. Importance of discussion early and explicitly, and outlining of stakeholders by PI, with setting of expectations
2. Referring clinicians are key contributors, often acting above and beyond busy clinical jobs to refer, but contribution very different to 2 years work in lab.

Resources

- Article in the BMJ: Authorship is dead: Long live contributorship

C. *A group leader collaborates with, and publishes regularly with his wife. On a recent manuscript, the group leader is senior author and his wife is first author. This has not been discussed with the other co-authors or with the team.*

Issues

1. What issues does this raise?
2. Is there a conflict of interest if the group leader's wife has performed the majority of the research?

Reflections

1. How might this situation be perceived by members of the team?

Resources

- The University has a policy on Disclosure of Intimate Relationships

D. In a busy lab, one postdoc is bringing work to fruition under pressure, and other postdocs agree to help with routine tissue extractions and immunoblots. They devote several days to this and hand over raw data after completing the work. When it comes to writing the manuscript, the primary postdoc suggests the helpers are acknowledged only, as they simply generated data without intellectual contribution, pointing to the International Committee of Medical Journal Editors (ICMJE) to back up this position. The other postdocs point out that they could have been doing their own work during this time and suggest that significant contribution has been devalued.

Issues

1. Are any individual criteria correct?
2. How to balance important contributions vs intellectual engagement, especially where an opportunity cost is involved?

Reflections

1. Importance of clear expectation setting at start of within lab collaboration
2. Contributor vs Co-author?

Resources

- UKRIO code of practice for researchers, section on publication and co-authorship

E. A clinician scientist/postdoc is applying for a prestigious fellowship. To bolster their chance of success, the group leader gives them joint first author position on a manuscript that they have made only a minor contribution to. The postdoc in the lab who has carried out the majority of the work feels this is unfair, but the group leader defends the position on the basis that the clinician scientist/postdoc "needs it for their career".

Issues

1. What issues does this raise?
2. What, if anything, might an 'active bystander' do here?

Reflections

1. What might this type of behaviour (on the part of the group leader) do to the dynamics of the team?
2. What might the consequences be for the group leader?

Resources

- UKRIO code of practice for researchers, section on publication and co-authorship
- Edinburgh Research Office: research misconduct