Fair recognition and authorship for technicians

Guidance paper

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Technicians provide the University and schools with expertise that is vital for the functioning of our research community and the publication of high-quality research. They generate data using advanced techniques and state-of-the-art instrumentation, materials, devices and systems; have significant involvement in the conception, design, and implementation of experiments; perform data analysis and interpretation; and carry out the development, design, production, assembly, and application of specialised equipment.

When technicians make an intellectual contribution to research that results in a publication, they deserve to be recognised in the same way as any other contributor, either through co-authorship or direct acknowledgement as appropriate.

The lack of recognition can negatively impact career progression and self-worth of individuals, and a lack of appreciation of technician cohorts. Despite the essential and highly skilled nature of their work, technicians are often not included in conversations surrounding experimental planning and authorship, and their hard work often goes unrecognised within scholarly output.

This guidance document aims to highlight;

1. some of the benefits of including technicians in authorship discussions from the outset of a research project.
2. provides guidance on what types of work constitute authorship or acknowledgement.
3. suggests steps that researchers can take to ensure that their technical colleagues are getting the recognition that they deserve.

1. Benefits of Technician authorship and acknowledgement

There are multiple personal, group, departmental and institutional benefits to correctly acknowledging technicians on research papers.

For technicians, it gives appropriate acknowledgement for contribution to research (often above and beyond their contracted roles), it gives them self-worth, supports their career development, supports future funding applications/being named on an application, as well as highlights their skills and experiences.

For research groups and departments, there is greater recognition of the work technicians have and can do, could allow for cross collaboration or beginning of new positions in other groups, retaining specialist skills and enhancing the research potential of the department.

For the institution, the technical services cohort is greater recognised, which is one of the 4 key aspects of the Technician Commitment, which the university has signed up to.

2. What constitutes authorship or acknowledgement?

It is important to recognise the contributions of technical staff to the advancement of scientific research in all instances, but the type of recognition that is most appropriate will depend upon the nature of the contribution. The following guidance has been written to assist you in deciding what constitutes either authorship or acknowledgement in a research publication. The examples we show here are not exhaustive. You could refer to CASRAI's CRediT (Contributor Roles Taxonomy) resource for suggested contributor role definitions and if you are still unsure on the level of contribution, COPE has a wealth of useful information on authorship and contributorship. This guidance document should also be considered alongside the authorship policy of the relevant journal and its publisher.

1.1 Authorship

If a technician makes a substantial intellectual contribution to the work and demonstrates accountability for the accuracy and integrity of the resulting data, then they should be included as a co-author on any resulting publications as would any other contributing scientist. Examples of the type of work that would constitute authorship include, but are not limited to:

- designing experiments, custom equipment, software, or script
- developing new data generation or analysis methodology
- interpreting data
- significantly redeveloping existing methodology or equipment to suit new sample types or research questions
- a bespoke service provided by Core Facility staff that includes any of the above examples

1.2 Acknowledgement

All other contributions to the work, should be recognised with a formal acknowledgement of the individual technician and/or the Core Facility in the acknowledgements section of the resulting publication. Examples of the type of work that would constitute an acknowledgement include, but are not limited to:

- performing instruction-led acquisitions of data or routine sample preparations
- monitoring and maintaining experiments or equipment
- laboratory supervision of a research student
- a standard service provided by Core Facility staff (e.g. confocal microscope, NMR, workshop, etc)

1.3 Technical Document Authorship

In some disciplines, it may be relevant for a technician to draft and publish technical documents outlining the design and/or creation of a piece of hardware that is critical to an experiment or project. This allows the technician to take a much larger role in a stand-alone publication, and means that the larger experiment paper can reference the detailed design document(s).

3. How can I help?

As a researcher, there are a few things that you can do to ensure that your technical colleagues are getting the recognition that they deserve:

2.1 Plan

If you are planning a new grant proposal, research project, experiment design, or analysis that will require the assistance of a technical colleague, think about the nature of the work that you need them to do, and what level of recognition (Authorship or Acknowledgement) is appropriate for that type of work.

2.2 Talk

Have a conversation about how you view their role in the work, so that they know what will be expected of them, and how much of their time you will require. During these conversations you may find they have additional skills that you were unaware of that would be beneficial to your project.

2.3 Review

Plans can change. You may find that the nature of your technical colleague's contribution has changed as the project has progressed. If this is the case, refer back to points 1 and 2.

2.4 Involve

Ask your technical colleague whether they would like to be involved in writing the manuscript. If they have designed a method or generated data, they will want to know that it has been accurately reported.

2.5 Inform

All co-authors will be contacted by an editor during the peer review process, but this communication does not extend to acknowledgements. Communicate the outcome of the peer review process to all of the people who have been formally acknowledged. If the paper has been accepted for publication, they will want to celebrate with you!

4. Summary

Encouraging conversations about authorship and acknowledgement between researchers and their technical colleagues serves to clarify the roles, responsibilities, and expectations of the individual technician; ensures that they are fully accountable for their contributions to the

University's research output; and empowers them to take an active role in the reporting and interpretation of their work.

Recognising a technician's contributions to research results in significant benefits to the individual, the Principal Investigator, and the University as a whole, and ensures that their hard work is visible to people inside and outside the organisation.

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University of Southampton. Technicians and Publications: Fair Attribution Guidance. [Online]. [Accessed April 2023]. https://www.southampton.ac.uk/~assets/doc/technicians/UoS_Techs_Pubs_Fair_Attribution_Guidance.pdf?