

Fair Attribution Guidelines for Technical Contribution to Research and Innovation.

Overview and Purpose

Technical staff are a key part of our research teams and make a vital contribution to supporting and enabling research across the University. Ulster University recognises the vital contributions that technical staff from all disciplines make to research and innovation and are committed to ensuring that these contributions are appropriately recognised and attributed through inclusion on research outputs including publications and patents.

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

When technical staff make a contribution to research, they deserve to be recognised in the same way as any other contributor, either through co-authorship or direct acknowledgement as appropriate. However, despite the essential and highly skilled nature of their work, technical staff are often overlooked in conversations surrounding project planning and authorship, and their hard work often goes unrecognised within scholarly output. Any lack of recognition can negatively impact career progression.

This guidance document aims to highlight the benefits of including technical staff in authorship discussions from the outset of a research project; provides guidance on what types of work constitute authorship or acknowledgement; and suggests steps that researchers can take to ensure that their technical colleagues are getting the recognition that they deserve.

All researchers, at every level, are expected to follow these guidelines and include relevant staff from the outset.

The benefits of inclusion

Involving technical staff in authorship discussions, and recognising their work in publications by co-authorship or by formal acknowledgment, provides benefits to the individual, the Principle Investigator, the project/research team, the University, and the wider research community, and is a traceable and easily demonstrable record of an individual's contributions. Here are just a few of the potential wider benefits:

- *Accuracy and transparency*

If technical staff are generating output for a research project, involvement in experimental planning and authorship discussions from the outset will minimise the risk of output misinterpretation, and help ensure that the methods they used to generate the output are accurately described. This in turn increases transparency and ensures reproducibility in the resulting publications.

Technical staff should have the opportunity to participate in drafting the parts of the paper that apply to their contribution, and give final approval to the wording and conclusions drawn before publication. This is particularly relevant to the services provided by core facilities, where their services may be cited, but they are often not actively involved in the writing and proof-reading process after the outputs has been given to the researcher.

- *Offering a different perspective*

Technical staff, by their very nature are practical problem-solvers. Involving technical staff in the experimental planning stage of a project invites a new perspective and makes for a more creative, efficient, and productive research environment.

- *Evidencing Continual Professional Development*

Recognition of technical staff's work in publications provides a record of their professional achievements. This can be used as evidence for Continual Professional Development (CPD) if the technician is Professionally Registered, or provide evidence for new applications and can help to guide career discussions during an appraisal. Furthermore, if technical staff are moving on to another position or want to study for further postgraduate qualifications, recognition of their work in publications provides evidence of their prior research experience.

- *Providing evidence of the University's research support strategy*

Recognition of technical staff in publications provides valuable supporting evidence of the University's strategy to support research and enable impact, which is an integral part of People, Culture and Environment for REF2029. It

demonstrates that the University is cultivating a professional technical network that plays a significant role in the delivery of high-quality research.

- *Inclusion*

Involving technical staff in authorship discussions and giving credit where credit is due, increases staff morale and fosters a culture of inclusivity and mutual respect between colleagues, irrespective of career pathway.

- *Promoting our Core Facilities*

Our University's Core Facilities are often run by, or rely on, the expertise of highly skilled and experienced technical staff, but their substantial research contributions are often overlooked. Acknowledging the contributions of Core Facilities to research and accurately describing their work in resulting publications strengthens the professional reputation of a Core Facility and its technical staff. This results in a reputational and financial benefit to the University as a centre of research excellence and a provider of high quality, state-of-the-art facilities and services.

What constitutes authorship or acknowledgement?

It is important to recognise the contributions of technical staff to the advancement of research and innovation in all instances, but the type of recognition that is most appropriate will vary dependent upon the nature of the contribution. The following guidance has been written to assist you in deciding what kinds of work would constitute 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, the [Committee on Publication Ethics](#) (COPE) has a wealth of useful information on authorship and contributorship. This guidance document should also be considered alongside the University's [Code of Practice for Professional Integrity in the Conduct of Research](#) and the authorship policy of the relevant journal and its publisher. Research funders may have some specific requirements on authorship and acknowledgements and it is the responsibility of the PI to ensure these are adhered to.

1. Authorship

If technical staff make a contribution to the work and demonstrates accountability for the accuracy and integrity of the resulting output, then they should be included as a co-author on any resulting publications as would any

other contributor. Examples of the type of work that would constitute authorship include, but are not limited to:

- designing bespoke protocols, materials, products, custom equipment, software, or script
- Providing substantial expert knowledge, advice or guidance
- developing new output generation or analysis methodology
- interpreting output/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 the any of the above examples

Please refer to Section 12 of the University's [Code of Practice for Professional Integrity in the Conduct of Research](#) for more information on Authorship and Contributor Best Practice.

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 protocols, procedures, processes or equipment
- Related supervision of a research student
- a standard service provided by Core Facility staff

There are five distinct cases in which facilities and services are used:

1. User led procedures within the University, with initial training by technical staff.
2. Technical support in procedure or protocol design and/or information acquisition and/or output interpretation and analysis.
3. Collaboration with external users in which technical staff support protocol design and/or data acquisition, and/or interpretation of output.
4. Occasional use, to obtain output for a simple experiment, where technical staff perform routine characterisation, sending output to the user to analyse.
5. The preparation of items or materials used during procedures/ experiments.

For all five cases, we anticipate that publications and reports will include the following acknowledgement statement:

“The Authors acknowledge use of [insert equipment or service used] provided by [insert team or department name], Ulster University.”

In case (4) where the technical staff assist with the obtaining output for a simple procedure , perform routine characterization, or send output to the user to analyse they should be acknowledged by name – an example Acknowledgement statement is below:

“The Authors would like to acknowledge the help of [insert name] and the use of [insert service or characterisation facilities] within the [insert team or department name] at Ulster University.”

Please refer to Section 12 of the University’s [Code of Practice for Professional Integrity in the Conduct of Research](#) for more information on Acknowledgements in publications.

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:

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. *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.

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.

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 output, they will want to know that it has been accurately reported.

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 colleagues who have been formally acknowledged. If the paper has been accepted for publication, they will want to celebrate with you!

Reporting Concerns

Ulster University wants to empower everyone to raise any concerns about attribution through the proper and correct routes. Concerns about suspected breaches of best practice in attribution should be confidentially raised in the first instance with an individual's Head of Department, Research Director or Associate Dean (Research & Innovation) who will advise on the appropriate action to take. The next step, depending on the nature of the issue, may include investigation as an allegation of misconduct.

In summary

Encouraging conversations about authorship and acknowledgement between researchers and their technical colleagues serves to clarify the roles, responsibilities, and expectations of the individual member of technical staff; 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 technical staff member's contributions to research significantly benefits the individual, the Principal Investigator, the project/research team and the University as a whole.