

Check application

Status: **SUCCESSFUL**

Application

Application reference



Application name

CORNERSTONE Photonics Innovation Centre (C-PIC)

Applicant

Graham Reed

Organisation

University of Southampton

Application status

Successful

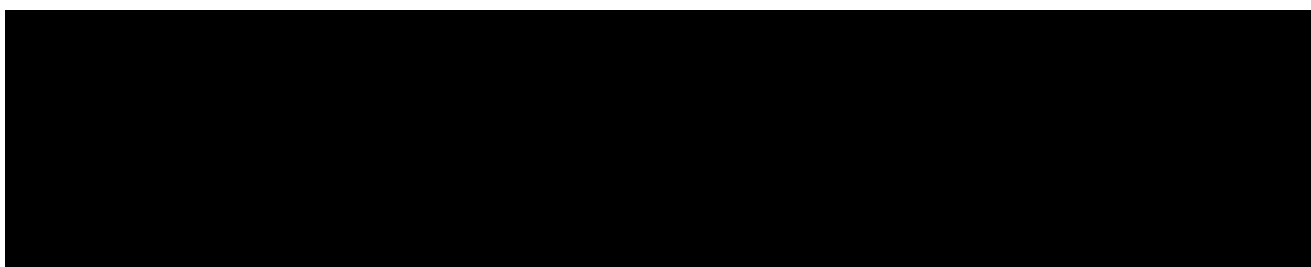
Application status:

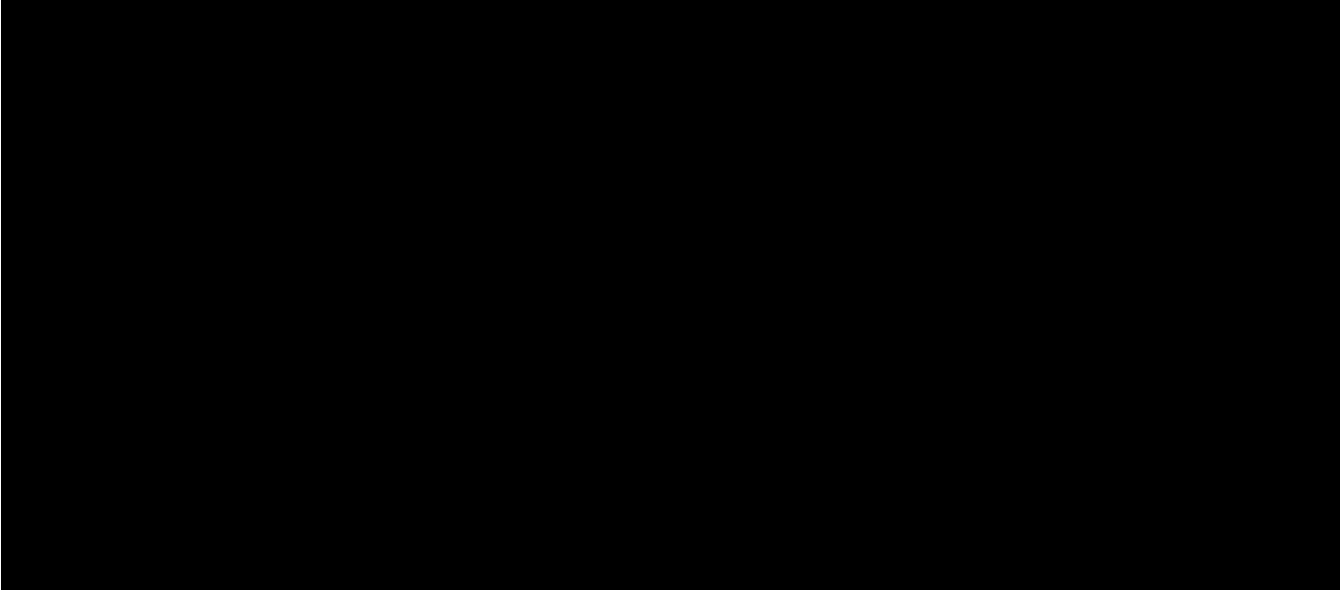
Successful

CORNERSTONE Photonics Innovation Centre (C-PIC)

1. Details

Summary





However, access to silicon prototyping facilities remains a challenge in the UK due to the high cost of both equipment and the cleanroom facilities that are required to house the equipment. Furthermore, there is often a disconnect in communication between industry and academia, resulting in some industrial challenges remaining unsolved, and support, training, and networking opportunities for academics to engage with commercialisation activities isn't widespread.

The C-PIC host institutions comprising University of Southampton, University of Glasgow and the Science and Technologies Facilities Council (STFC), together with 105 partners at proposal stage, will overcome these challenges by uniting leading UK entrepreneurs and researchers, together with a network of support to streamline the route to commercialisation, translating a wide range of technologies from research labs into industry, underpinned by the C-PIC silicon photonics prototyping foundry. Applications will cover data centre communications; sensing for healthcare, the environment & defence; quantum technologies; artificial intelligence; LiDAR; and more.

We will deliver our vision by fulfilling these objectives:

1. Translate a wide range of silicon photonics technologies from research labs into industry, supporting the creation of new companies & jobs, and subsequently social & economic impact.
2. Interconnect the UK silicon photonics ecosystem, acting as the front door to UK expertise, including by launching an online Knowledge Hub.
3. Fund a broad range of Innovation projects supporting industrial-academic collaborations aimed at solving real world industry problems, with the overarching goal of demonstrating high potential solutions in a variety of application areas.

- 4. Embed equality, diversity, and inclusion best practice into everything we do.
- 5. Deliver the world’s only open source, fully flexible silicon photonics prototyping foundry based on industry-like technology, facilitating straightforward scale-up to commercial viability.
- 6. Support entrepreneurs in their journey to commercialisation by facilitating networks with venture capitalists, mentors, training, and recruitment.
- 7. Represent the interests of the community at large with policy makers and the public, becoming an internationally renowned Centre able to secure overseas investment and international partners.
- 8. Act as a convening body for the field in the UK, becoming a hub of skills, knowledge, and networking opportunities, with regular events aimed at ensuring possibilities for advancing the field and delivering impact are fully exploited.
- 9. Increase the number of skilled staff working in impact generating roles in the field of silicon photonics via a range of training events and company growth, whilst routinely seeking additional funding to expand training offerings.

Start date

April 2024

Duration

60 months

2. Core team

Name	Role	Organisation
Graham Reed	Project lead	
Anna Peacock	Project co-lead (UK)	
Callum Littlejohns	Project co-lead (UK)	
David Thomson	Project co-lead (UK)	

Name	Role	Organisation
Frederic Gardes	Project co-lead (UK)	
Goran Mashanovich	Project co-lead (UK)	
Harold Chong	Project co-lead (UK)	
Jize Yan	Project co-lead (UK)	
Milos Nedeljkovic	Project co-lead (UK)	
Weiwei Zhang	Project co-lead (UK)	

Name	Role	Organisation
Marc Sorel	Project co-lead (UK)	

3. Vision and Approach

Application question

What are you hoping to achieve with and how are you going to deliver your proposed work?

For the Vision, explain how your proposed work:

- is of excellent quality and importance within or beyond the field(s) or area(s)
- has the potential to advance current understanding, generates new knowledge, thinking or discovery within or beyond the field or area
- is timely given current trends, context and needs
- impacts world-leading research, society, the economy or the environment

Within the Vision section we also expect you to:

- identify the potential for its outcomes to have a transformative effect on the UK's semiconductor landscape

For the Approach, explain how you have designed your approach so that it:

- is effective and appropriate to achieve your objectives
- is feasible, and comprehensively identifies any risks to delivery and how they will be managed
- if applicable, uses a clear and transparent methodology

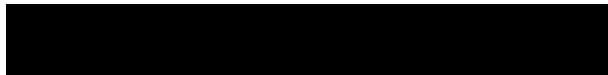
- if applicable, summarises the previous work and describes how this will be built upon and progressed
- will maximise translation of outputs into outcomes and impacts
- describes how your, and if applicable your team's, research environment (in terms of the place, its location, and relevance to the project) will contribute to the success of the work

Within the Approach section we also expect you to:

- describe the governance plan and the structures that you will have in place, how they will support the team and provide oversight
- demonstrate access to the appropriate services, facilities, infrastructure, or equipment to deliver the proposal
- provide a detailed and comprehensive project plan including milestones and timelines in the form of a Gantt chart or similar (additional 2-pages of A4)

Upload the vision and approach as a single PDF document, see details in the file upload guidance. In the text box simply enter 'attachment provided'.

Attachment provided.



4. Co-created research and innovation programme

Application question

How have you designed your research and innovation programme to maximise the impact of the IKC activity?

What the assessors are looking for in your response

Using the text box, explain how you have designed your research and innovation programme so that it:

- Has been co-created and co-delivered with businesses, industry and end users.
- identifies an appropriate strategy and plan to push fundamental research towards proof-of-concept, concept, commercialisation, and exploitation.
- evidence of a mechanism to engage key industrial partners and businesses.
- details of how the IKC will manage the outputs of the project, including any intellectual assets and intellectual property
- given that the majority of fabrication and manufacture is based overseas, how will you ensure that outcomes of the research are anchored to the UK and add value to the UK sector
- details of your plans for the additional Pump-prime industrial engagement and commercialisation funding from Innovate UK.

This section should cover how you will build links with businesses and enable them to exploit research outcomes, as well as discussing how the design of your research and innovation programme will be co-created with business and users, as appropriate. In addition, you should cover how you will use the Innovate UK “pump-priming” funding. You should also have a section on your specific "Exploitation Strategy", how you will handle IP and ensure research outcomes and value are anchored to the UK, recognising that a lot of the manufacture is overseas.

Embedded images guidance for the Funding Service

In this section you can include embedded images. Guidance and principles below.

You must:

use images sparingly and only to convey important information that cannot easily be put into words

insert each new image onto a new line

provide a descriptive legend for each image immediately underneath it (this counts towards your word limit)

Files must be:

in JPEG, JPG, JPE, JFI, JIF, JFIF, PNG, GIF, BMP or WEBP format
smaller than 8MB

4.1. Co-created programme with industry and academia

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

4.2. Exploitation & engagement plans to maximise impact

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

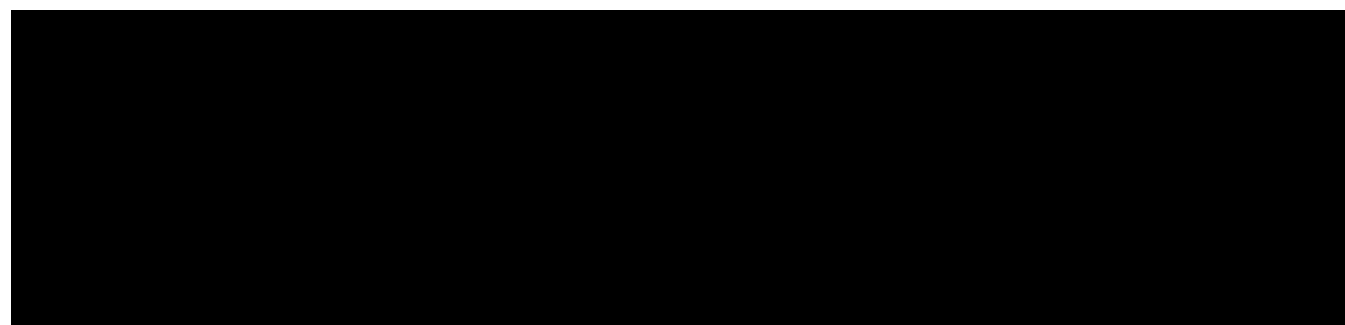
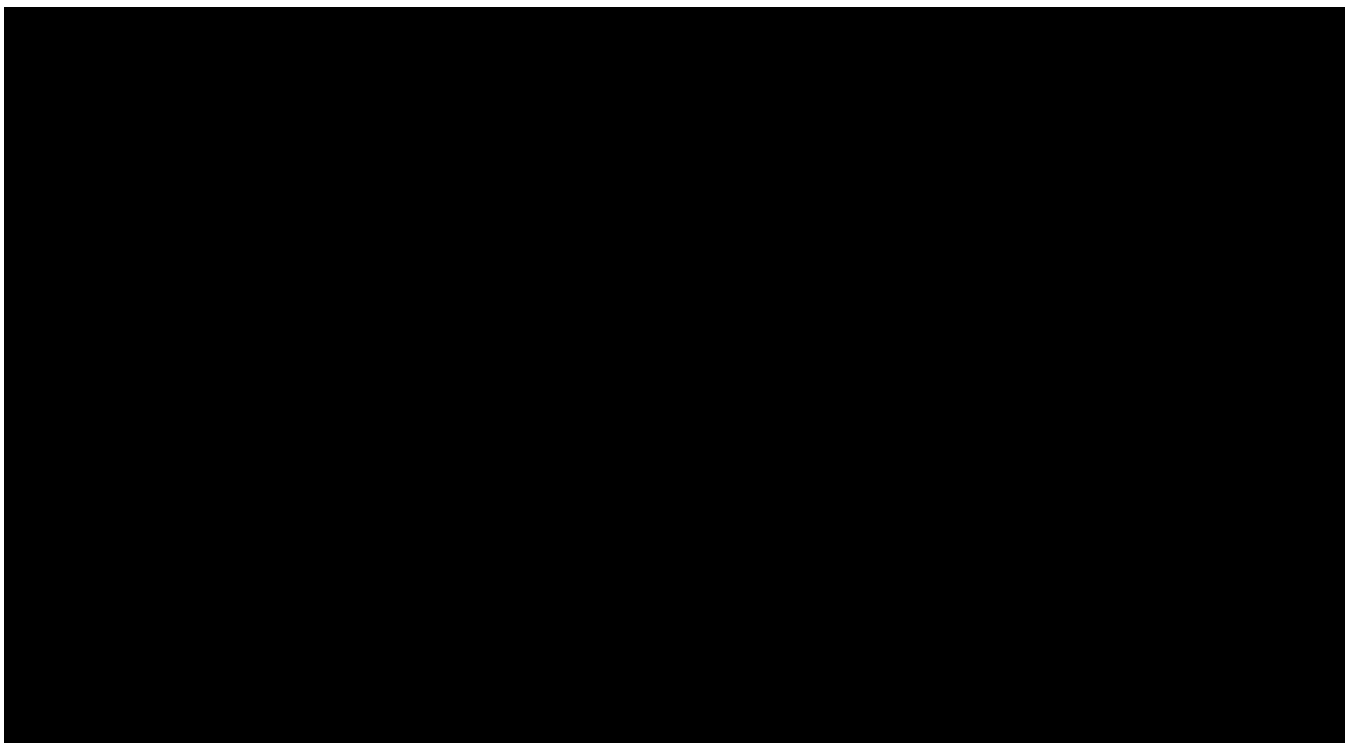
[REDACTED]

[REDACTED]

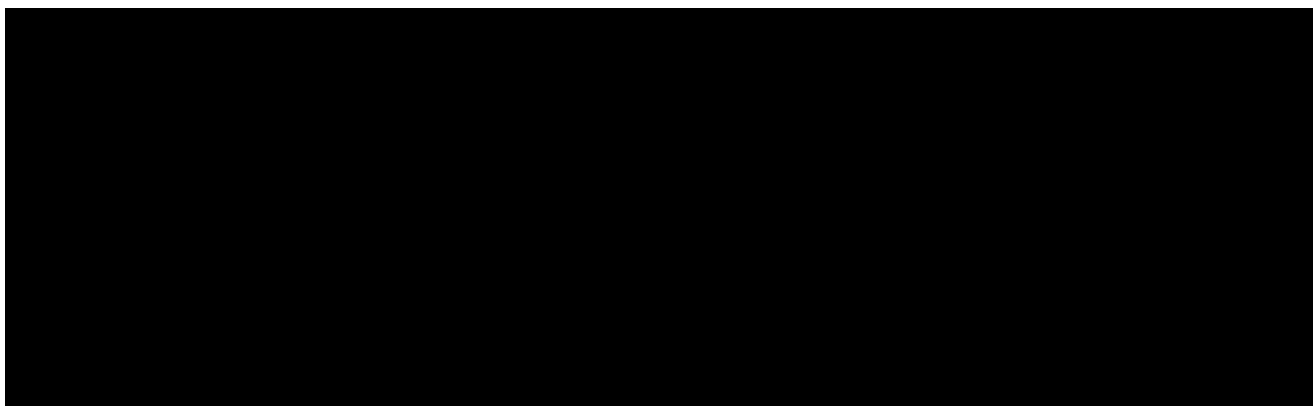
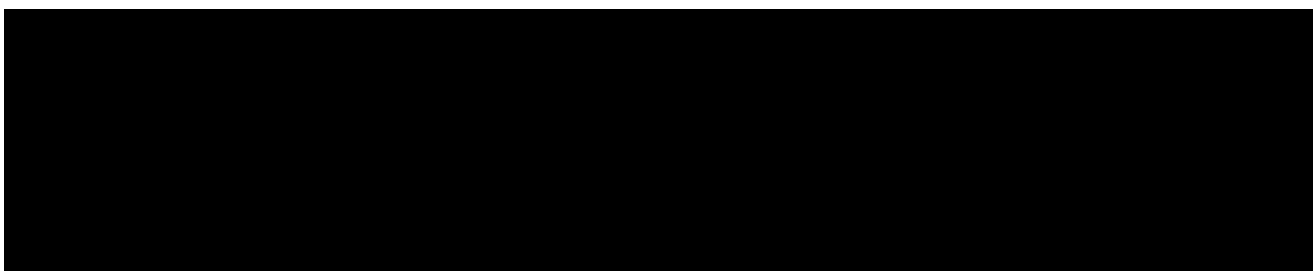
[REDACTED]

[REDACTED]

4.3. Management of intellectual property (IP) to anchor C-PIC outputs in the UK for economic benefits



4.4. Plans for Innovate UK funding to maximise engagement with industry



[REDACTED]

[REDACTED]

4.4.1. Industry focused outreach, events and training

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5. Applicant and team capability to deliver

Application question

Why are you the right individual or team to successfully deliver the proposed work?

Evidence of how you, and if relevant your team, have:

- the relevant experience (appropriate to career stage) to deliver the proposed work
- the right balance of skills and expertise to cover the proposed work
- the appropriate leadership and management skills to deliver the work and your approach to develop others
- contributed to developing a positive research environment and wider community

Contextual guidance: for this opportunity also please consider the right mix of non-academic staff to enable business engagement, development and assistance – enabling the push of emergent technology and services towards market.

The word count for this section is 1,500 words, 1,000 words to be used for R4RI modules and, if necessary, a further 500 words for Additions.

Use the Résumé for Research and Innovation (R4RI) format to showcase the range of relevant skills you, and if relevant your team (investigators,

researchers, other (technical) staff for example research software engineers, data scientists and so on, and partners), have and how this will help to deliver the proposed work. You can include individuals' specific achievements but only choose past contributions that best evidence their ability to deliver this work.

Complete this section using the R4RI module headings listed below. You should use each heading once and include a response for the whole team, see the [UKRI guidance on R4RI \(https://www.ukri.org/apply-for-funding/before-you-apply/resume-for-research-and-innovation-r4ri-guidance/#:~:text=UKRI%20committed%20to%20adopting%20a,UKRI%20throughout%202022%20and%202023.\)](https://www.ukri.org/apply-for-funding/before-you-apply/resume-for-research-and-innovation-r4ri-guidance/#:~:text=UKRI%20committed%20to%20adopting%20a,UKRI%20throughout%202022%20and%202023.). You can enter N/A for any you think irrelevant, and will not be penalised for doing so, but it is recommended that you carefully consider the breadth of your experience:

- Contributions to the generation of new ideas, tools, methodologies, or knowledge
- The development of others and maintenance of effective working relationships
- Contributions to the wider research and innovation community
- Contributions to broader research or innovation users and audiences and towards wider societal benefit

Additions

Provide any further details relevant to your application. This section is optional and can be up to 500 words. You should not use it to describe additional skills, experiences, or outputs, but you can use it to describe any factors that provide context for the rest of your R4RI (for example, details of career breaks if you wish to disclose them).

Complete this as a narrative. Do not format it like a CV.

Embedded images guidance for the Funding Service

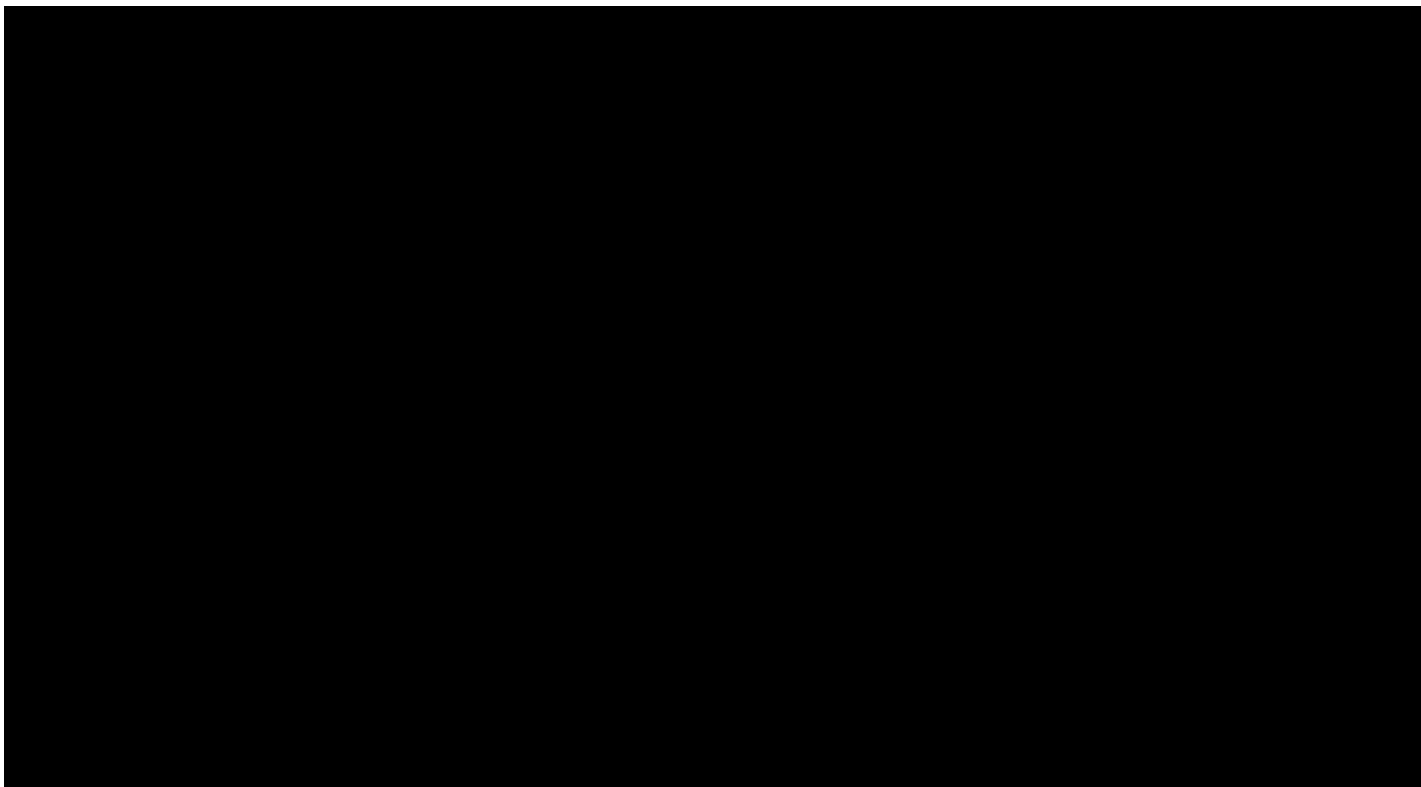
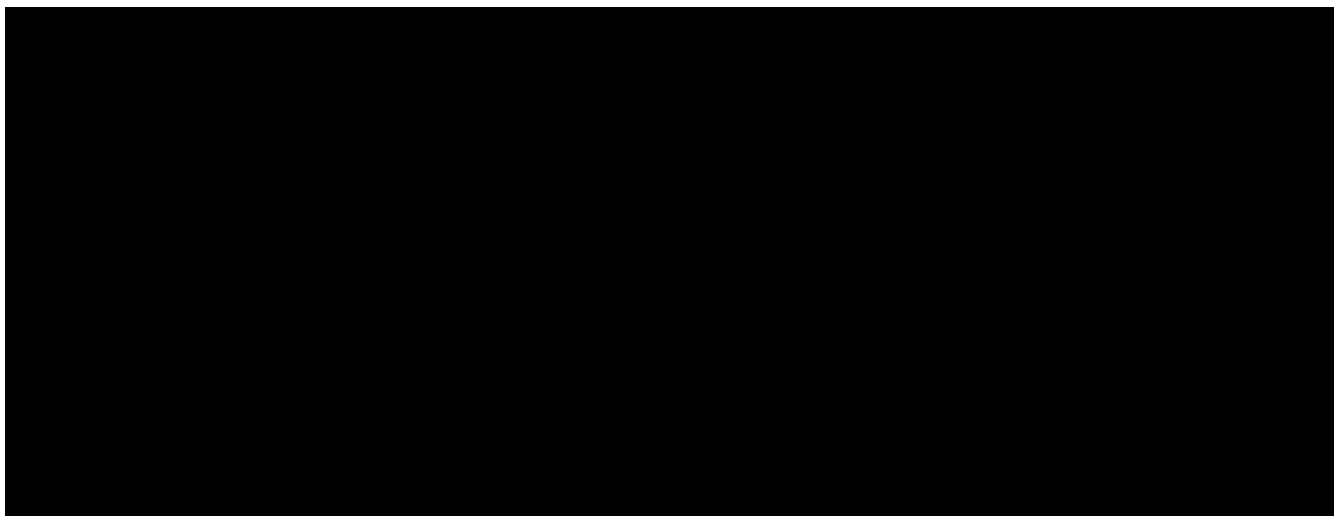
In this section you can include embedded images. Guidance and principles below.

You must:

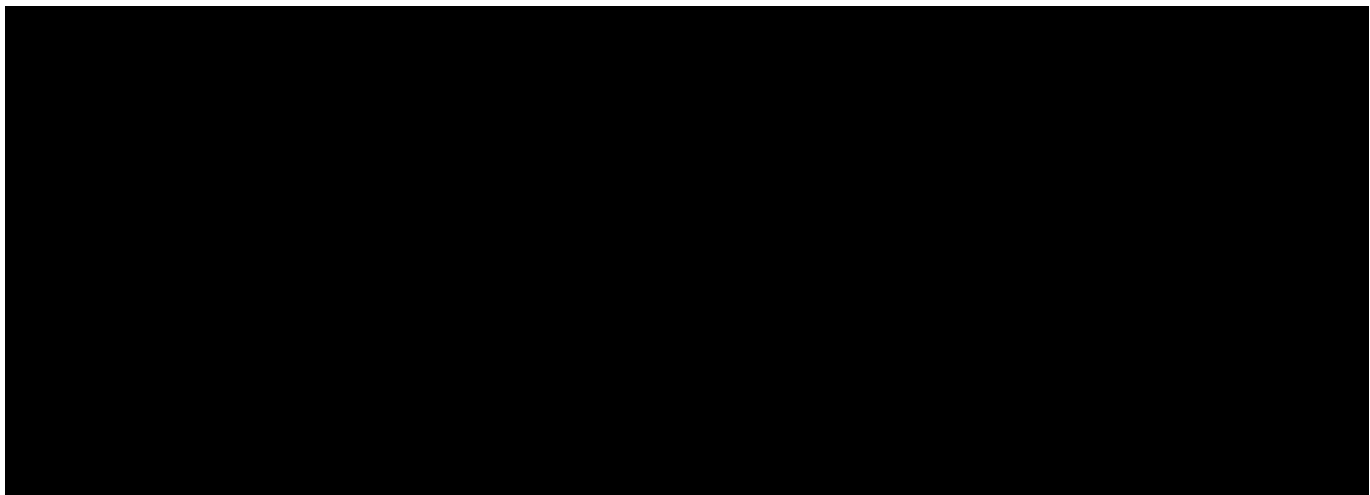
- use images sparingly and only to convey important information that cannot easily be put into words
- insert each new image onto a new line
- provide a descriptive legend for each image immediately underneath it (this counts towards your word limit)

Files must be:

in JPEG, JPG, JPE, JFI, JIF, JFIF, PNG, GIF, BMP or WEBP format
and smaller than 8MB



5.1. Contributions to the generation of new ideas, tools, methodologies, or knowledge



[REDACTED]

[REDACTED]

5.2. Contributions to the development of others and maintenance of effective working relationships

[REDACTED]

[REDACTED]

[REDACTED]

5.3. Contributions to the wider research and innovation community

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5.4. Contributions to broader research or innovation audiences, and towards wider societal benefit

6. Project partners: contributions

Application question

Provide details about any project partners' contributions using the template provided.

If you do not have any project partners, simply add 'N/A' into the text box, mark this section as complete and move to the next section.

If you do have project partners, download and complete the project partner contributions template (DOCX, 52KB)

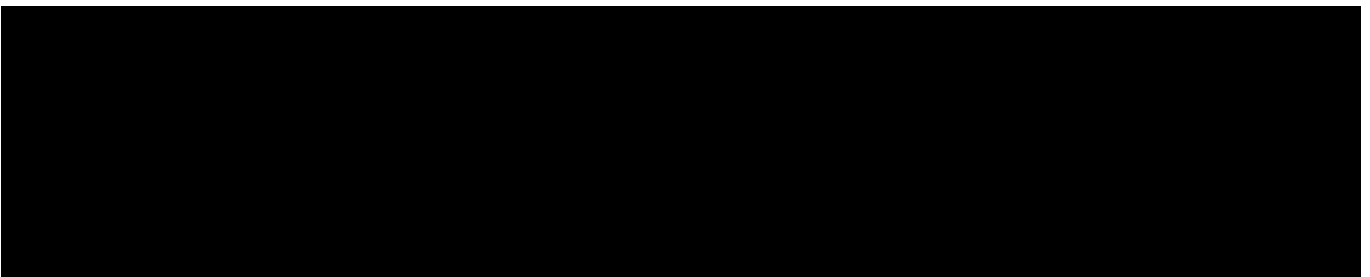
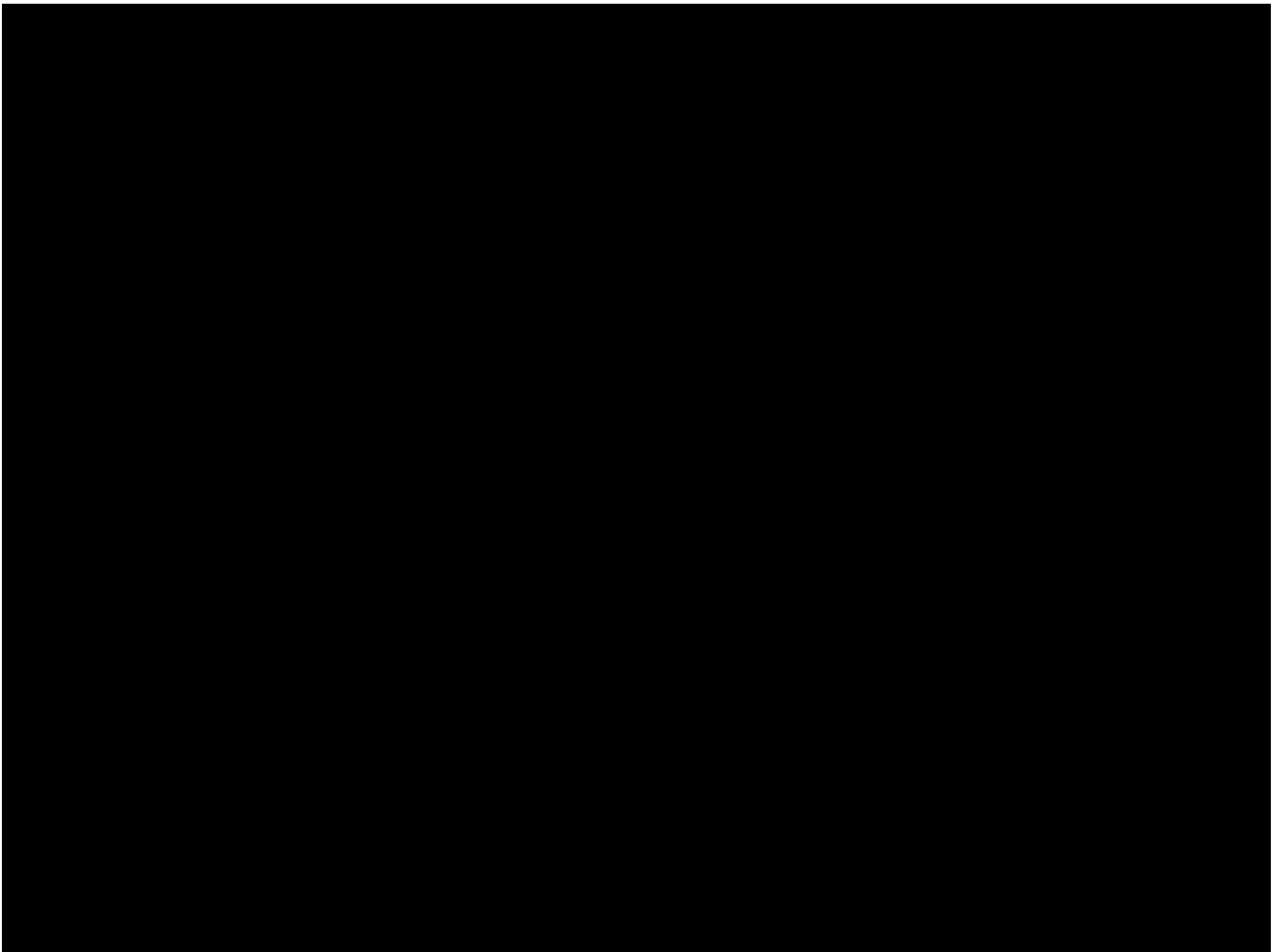
then copy and paste **only** the table within it into the text box below.

Ensure you have obtained prior agreement from project partners that, should you be offered funding, they will support your project as indicated in the template.

6.1. The C-PIC team have a long successful track-record of managing projects with a large number of partners

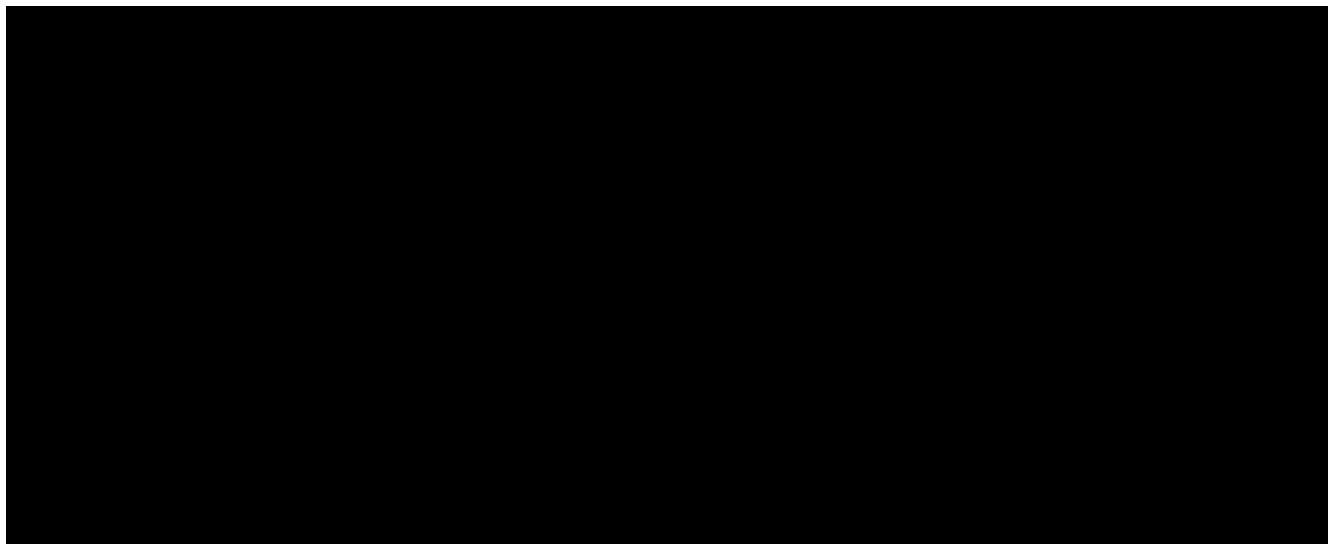
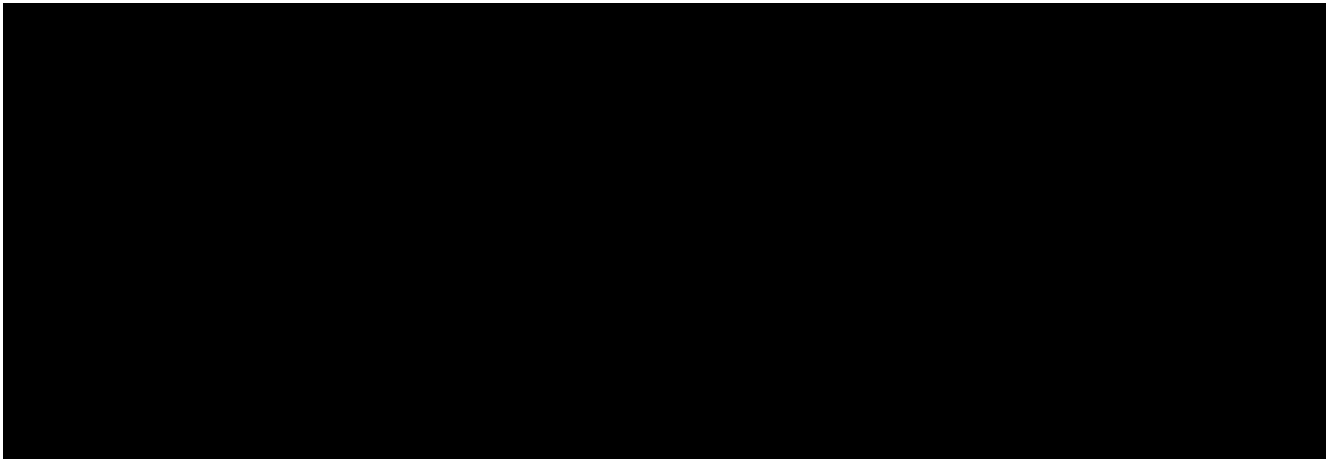


6.2. C-PIC will unite the SiPh community in the UK

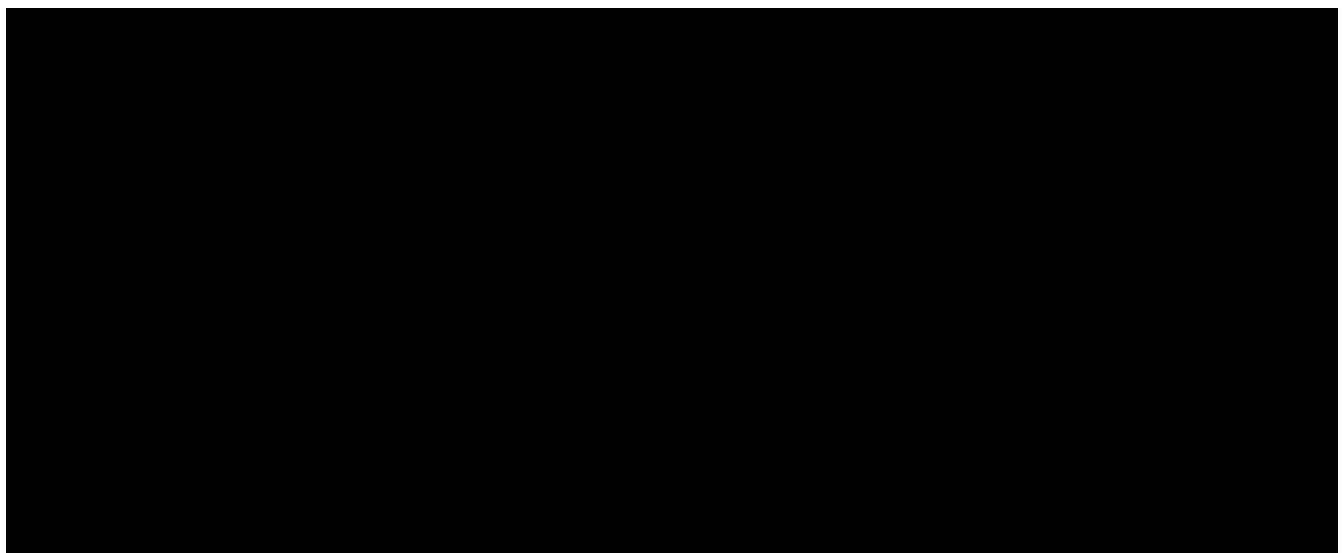




6.3. Providing flexibility to academic partners



6.4. Accelerating the time to market for SME partners





6.5. Providing access to expertise for large companies



6.6. Promoting the complementary offerings of service providers

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.7. Partner summary

[REDACTED]

[REDACTED]

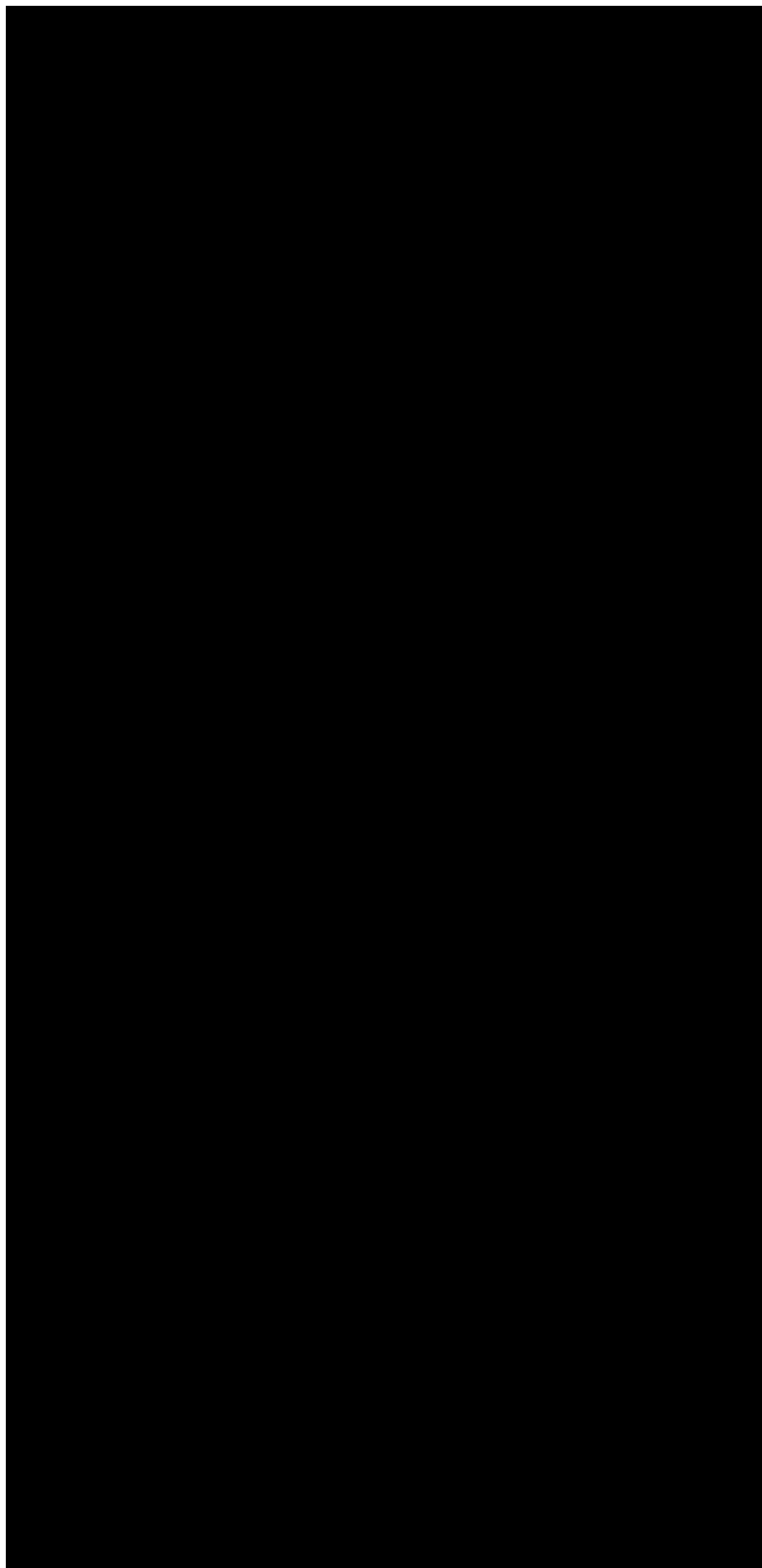
[REDACTED]

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[REDACTED]

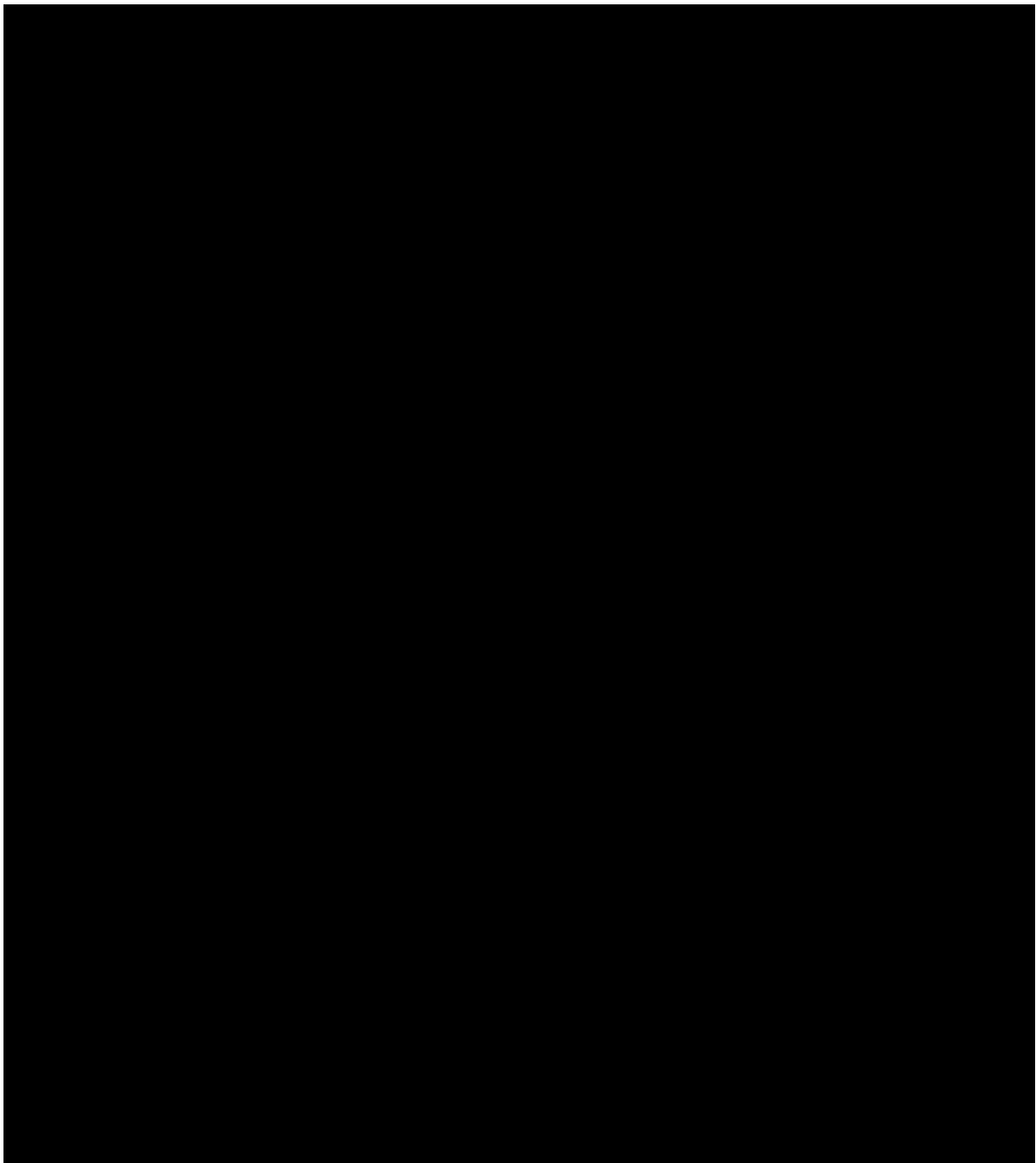
[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]



7. Project Partners: letters (or emails) of support

Application question

Upload a single PDF containing the letters or emails of support from each partner you named in the table in the previous 'contributions' section.

If you do not have any project partners, simply add 'N/A' into the text box, mark this section as complete and move to the next section.

If you have named project partners in the previous 'contributions' section, enter the words 'attachment supplied' in the text box below.

Each letter or email you provide should:

- confirm the partner's commitment to the project
- clearly explain the value, relevance and possible benefits of the work to them
- describe any additional value that they bring to the project
- please refer to EPSRC's guide for more guidance.

Please do not provide letters of support from host and Co-Investigator's research organisations.

Unless specifically requested, please do not include any personal data within the attachment.

Upload details are provided within the service on the actual application.

For audit purposes, UKRI requires formal collaboration agreements to be put in place if an award is made.

Partner letters uploaded in alphabetical order.



8. References

Application question

List the references you've use to support your application.

Ensure your application is a self-contained description. You can provide hyperlinks to relevant publications or online resources. However, assessors are not obliged to access the information they lead to or consider it in their assessment of your application.

You must not include links to web resources in order to extend your application. If linking to web resources, to ensure the information's integrity is maintained include, where possible, persistent identifiers such as digital object identifiers.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

9. Facilities

Application question

Does your proposed research require the support and use of a facility?

If not, enter N/A into the text box, mark this section as complete and move on to the next section.

If you will need to use a facility, you should follow your proposed facility's normal access request procedures. Where prior agreement is required, ensure you obtain their agreement that, should you be offered funding, they will support the use of their facility on your project.

In the text box below, for each requested facility you should provide:

- the name of facility, copied and pasted from [this list](#) [REDACTED]
[REDACTED]
[REDACTED]
- the proposed usage or costs, or costs per unit where indicated on that list
- confirmation you have their agreement where required

Do not put the facility contact details in your response.

[REDACTED]

[REDACTED]

[REDACTED]

10. Resources and Cost

Total full economic costs (fEC)

[REDACTED]

Total contribution from applying organisation(s)

[REDACTED]

Total funding applied for

[REDACTED]

Directly allocated

Cost categories

Category	Applied for
Staff	
Estates	
Other	

Staff breakdown

[illegible]

Directly incurred

Cost categories

Name	Role	%FTE

Indirect

Cost categories

Category	Applied for
Indirect costs	

Staff breakdown

No staff for this category

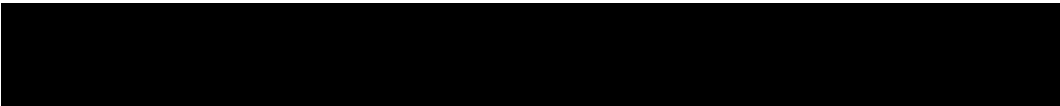
Exceptions

Cost categories

Category	Applied for
Staff	-
Equipment	-
Travel and subsistence	-
Other	-

Staff breakdown

No staff for this category



[Redacted]

Justification of resources

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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10.4 Championing EDI, training and public engagement

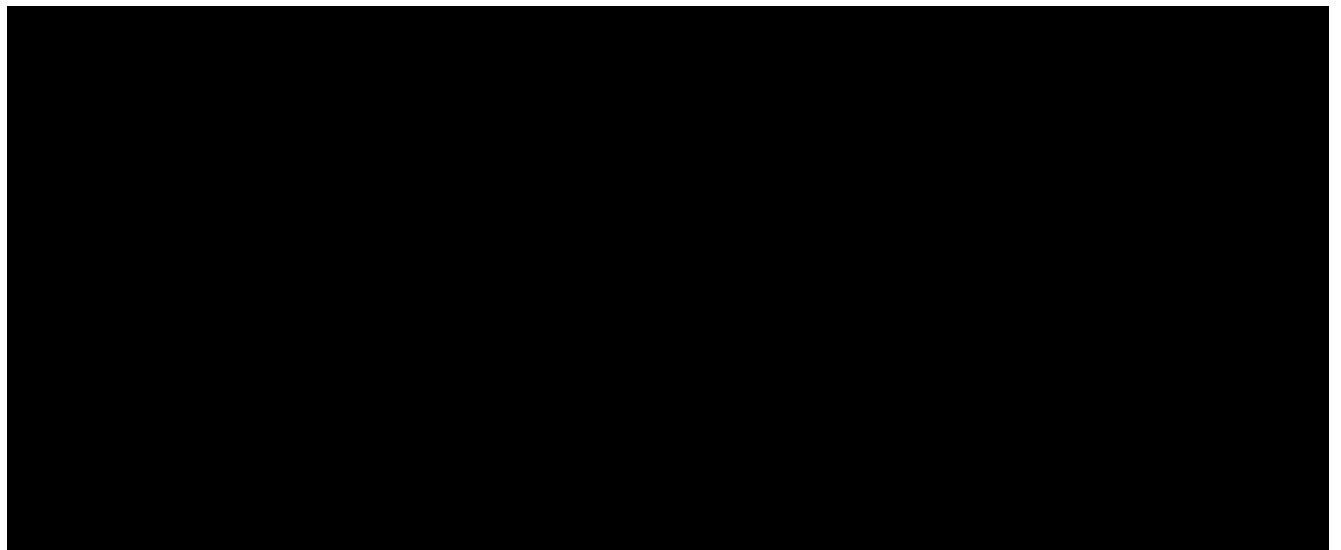
[REDACTED]

10.5. Facilities

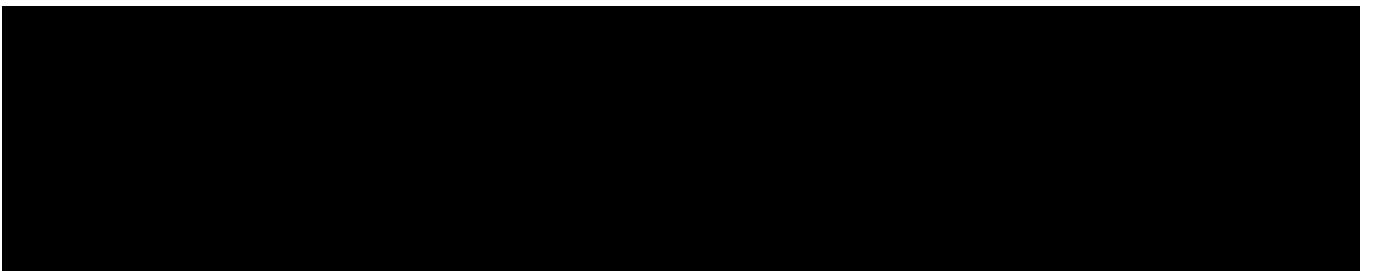
[REDACTED]



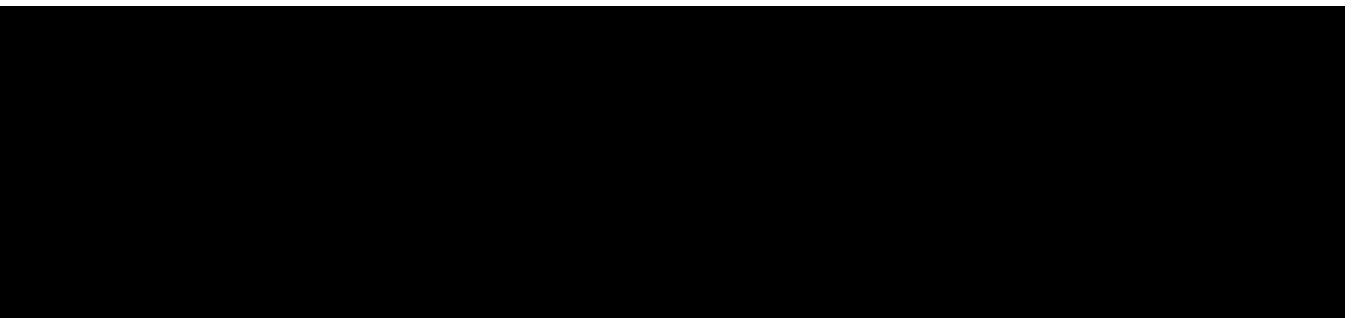
10.6. Consumables



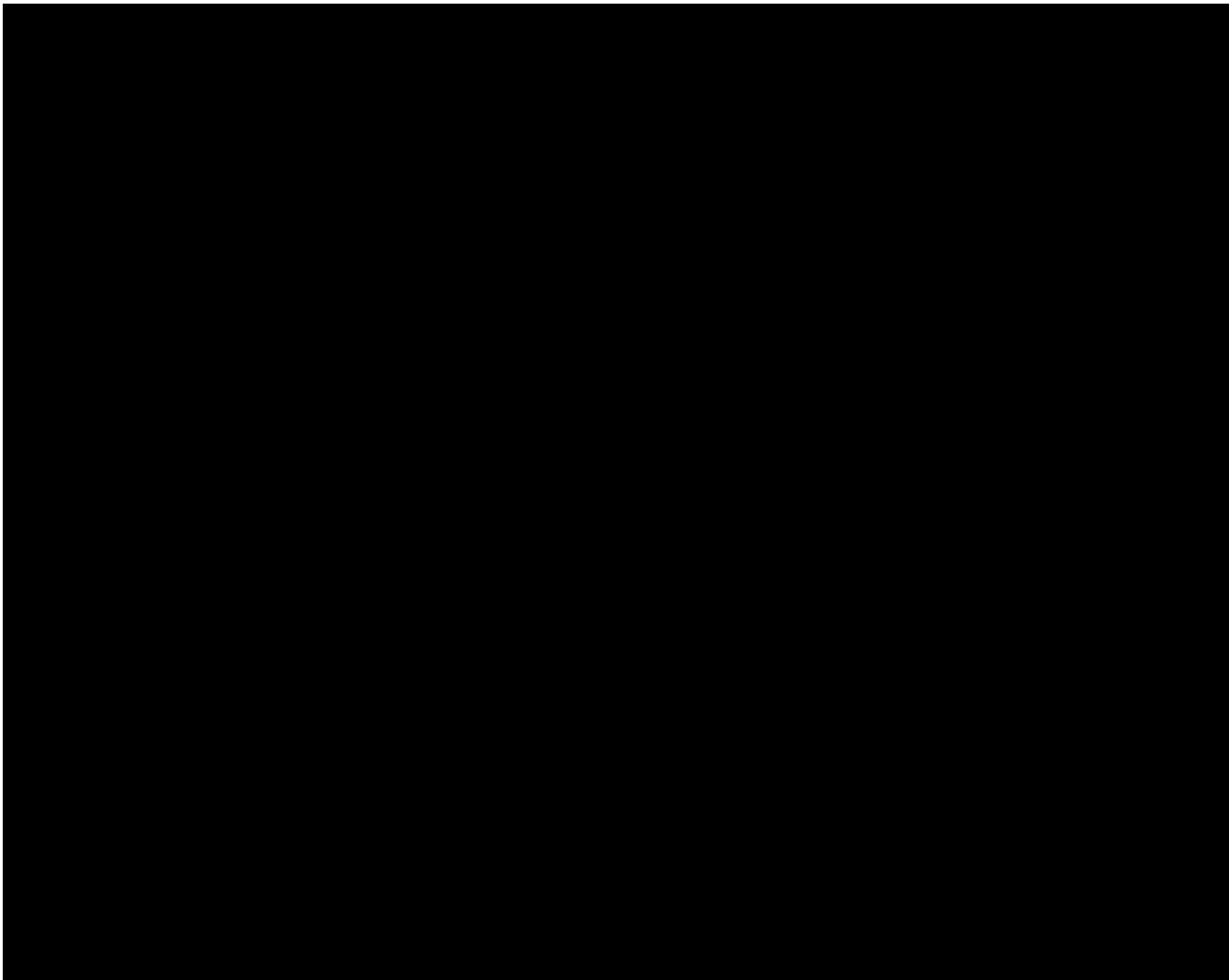
10.7. Equipment



10.8. Travel

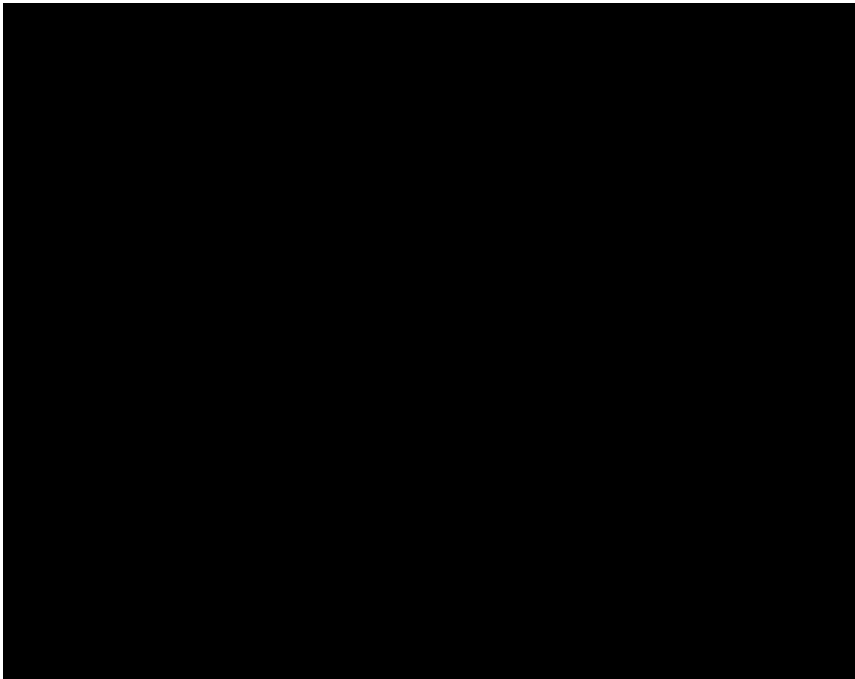


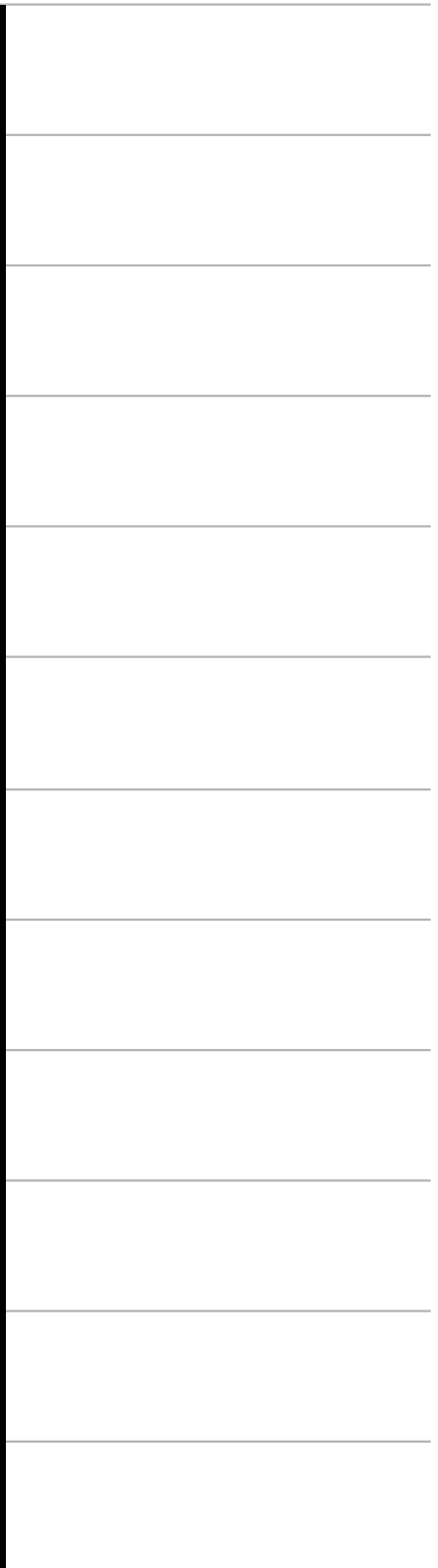
10.9. Financial leverage and value for money



10.10. C-PIC budget summary

Table 2 – Breakdown of requested C-PIC budget (100% fEC), excluding cash contributions from the host institutions.

Item	Budget (£)
	



11. Ethics and Responsible Research and Innovation (RRI)

Application question

What are the ethical or RRI implications and issues relating to the proposed work? If you do not think that the proposed work raises any ethical or RRI issues, explain why.

Demonstrate that you have identified and evaluated:

- the relevant ethical or responsible research and innovation considerations
- how you will manage these considerations

Embedded images guidance for the Funding Service

In this section you can include embedded images. Guidance and principles below.

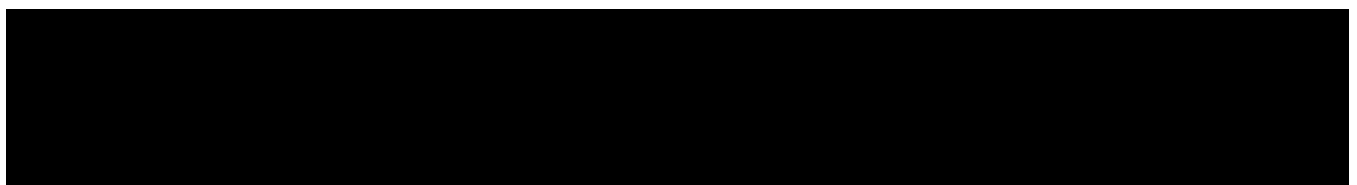
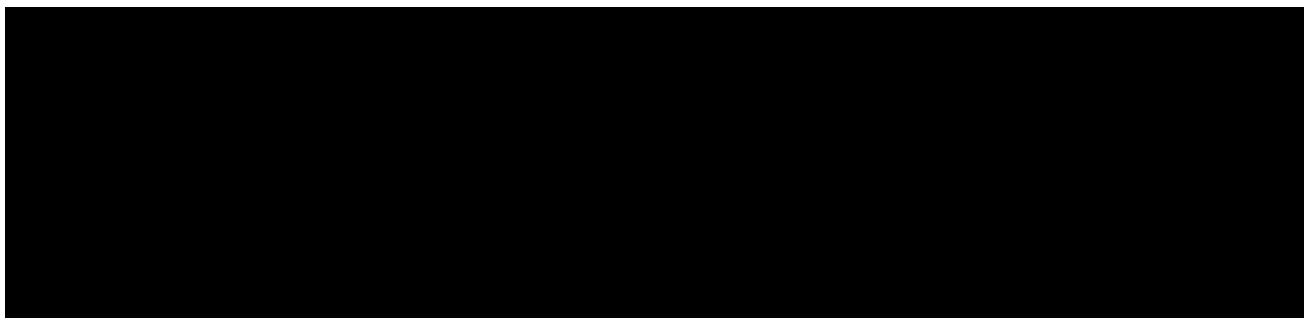
You must:

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- insert each new image onto a new line
- provide a descriptive legend for each image immediately underneath it (this counts towards your word limit)

Files must be:

in JPEG, JPG, JPE, JFI, JIF, JFIF, PNG, GIF, BMP or WEBP format

smaller than 8MB



[REDACTED]

[REDACTED]

11.1. Partner due diligence

[REDACTED]

11.2. Export control

[REDACTED]

[REDACTED]

11.3. National Security and Investment Act (NSI)

[REDACTED]

12. Genetic and Biological Risk

Application question

Does your proposed research involve any genetic or biological risk?

If not, enter 'N/A' into the text box, mark this section as complete and move on to the next section.

What the assessors are looking for in your response

In respect of animals, plants or microbes, are you proposing to:

- use genetic modification as an experimental tool, like studying gene function in a genetically modified organism
- release genetically modified organisms
- ultimately develop commercial and industrial genetically modified outcomes?

If yes, provide the name of any required approving body and state if approval is already in place. If it is not, provide an indicative timeframe for obtaining the required approval.

Identify the organism or organisms as a plant, animal or microbe and specify the species and which of the three categories the research relates to.

Identify the genetic and biological risks resulting from the proposed research, their implications and any mitigation you plan on taking. Assessors will want to know you have considered the risks and their implications to justify that any identified risks do not outweigh any benefits of the proposed research.

N/A

13. Research involving the use of animals

Application question

Does your proposed research involve the use of vertebrate animals or other organisms covered by the Animals Scientific Procedures Act?

If not, enter 'N/A' into the text box, mark this section as complete and do the same for the next question.

If you are proposing research that requires using animals, write 'Yes' in the text box. Then, download and complete this document [REDACTED]

[REDACTED] (DOCX, 74KB), which contains all the questions relating to research using vertebrate animals or other Animals (Scientific Procedures) Act 1986 regulated organisms. Then, save it as a PDF.

N/A

14. Conducting research with animal overseas

Application question

Will any of the proposed animal research be conducted overseas?

If not, enter 'N/A' in the text box, mark as complete and move to the next question.

If you are proposing to conduct overseas research, it must be conducted in accordance with welfare standards consistent with those in the UK, as per Responsibility in the Use of Animals in Bioscience Research (<https://www.nc3rs.org.uk/3rs-resources/responsibility-use-animals-bioscience-research>), on page 14.

You should also ensure all named applicants in the UK and overseas are aware of this requirement and provide a statement below to confirm that:

- all named applicants are aware of the requirements and have agreed to abide by them
- this overseas research will be conducted in accordance with welfare standards consistent with the principles of UK legislation
- the expectation set out in 'Responsibility in the Use of Animals in Bioscience Research' (<https://www.nc3rs.org.uk/responsibility-use-animals-bioscience-research>) will be applied and maintained
- appropriate national and institutional approvals are in place.

Overseas studies proposing to use non-human primates, cats, dogs, equines or pigs, will be assessed during NC3Rs review (<https://www.nc3rs.org.uk/who-we-are-and-what-we-do#services>) of research proposals. The required information should be provided by completing the template from the question 'Research Involving the use of animals'.

For studies involving other species listed below, you should select the relevant checklist or checklists from the list below, complete it and save it as a PDF and use the file upload feature to attach. If you need to complete more than one checklist, you should merge them into a single document and then save it as a PDF before uploading it.

- Additional questions on the use of rodents overseas.
(https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20rodents%20overseas%20%286%29_0.docx).
- Additional questions on the use of rabbits overseas.
(<https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20rabbits%20overseas.docx>).
- Additional questions on the use of sheep overseas.
(<https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20sheep%20overseas.docx>).
- Additional questions on the use of goats overseas.
(<https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20goats%20overseas.docx>).
- Additional questions on the use of pigs overseas.
(<https://nc3rs.org.uk/sites/default/files/documents/Additional%20questions%20on%20the%20use%20of%20pigs%20overseas.docx>).
- Additional questions on the use of cattle overseas.
(<https://nc3rs.org.uk/sites/default/files/Additional%20questions%20on%20the%20use%20of%20cattle%20overseas.docx>).
- Additional questions on the use of *Xenopus laevis* and *Xenopus tropicalis* overseas.
(<https://nc3rs.org.uk/sites/default/files/Additional%20questions%20on%20the%20use%20of%20Xenopus%20laevis%20%26%20%20Xenopus%20tropicalis%20overseas.docx>).

N/A

15. Research involving human participation

Application question

Will the project involve the use of human subjects or their personal information?

If not, enter 'N/A' into the text box, mark this section as complete and move on to the next section.

If you are proposing research that requires the involvement of humans subjects, provide the name of any required approving body and whether approval is already in place. Then, justify the number and the diversity of the participants involved, as well as any procedures.

Provide details of any areas of substantial or moderate severity of impact.

N/A

16. Research involving human tissues or biological samples

Application question

Does your proposed research involve the use of human tissues, or biological samples?

If not, enter 'N/A' into the text box, mark this section as complete and move on to the next section.

If you're answering 'yes', provide the name of any required approving body and whether approval is already in place.

You should justify the use of human tissue or biological samples specifying the nature and quantity of the material to be used and its

source.

N/A
