# **REP Project Proposal form 2024**

To submit a project to be advertised by EASTBIO DTP to prospective applicants, please detach this form, complete and submit it to [enquiries@eastscotbiodtp.ac.uk](mailto:enquiries@eastscotbiodtp.ac.uk) **no later than the 31 March 2024**. Note that the information you provide below will be shared with prospective applicants via the EASTBIO website and across the DTP. After confirmation by EASTBIO, you can also advertise the project via your local institution and link to <https://www.ed.ac.uk/biology/eastbio/research-experience-placements>. You can either develop a project to be advertised openly by EASTBIO or you can do so after being contacted directly by a prospective student you wish to sponsor for the REP scheme.

Email us if you have further questions.

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| **EASTBIO REP Project Proposal Form 2024**  **https://www.ed.ac.uk/biology/eastbio/research-experience-placements** | |
| **Your name** | Dr Annis Richardson |
| **Your affiliation (e.g. University of Dundee, SRCU, etc.) and staff webpage** | University of Edinburgh, School of Biological Sciences |
| **Your email** | Annis.richardson@ed.ac.uk |
| **REP Project title** | Towards engineering floral organs for higher quality barley grain |
| **Details of the local administrator to liaise with the EASTBIO team** (*name and contact email address*) | Lindsay Singleton |
| **Project’s Strategic area** | **Bioscience for sustainable Crops and Soil** |
| **A 200-word Project summary**  *Make sure that the project has a clear objective, is feasible within the maximum REP duration, and clearly demonstrates how it supports the student’s skills development and their confidence in considering and undertaking further research* | Barley is the fourth most cultivated cereal crop in the world and is the most important crop in Scotland. The highest quality barley grain is used by the malting industry to produce malt for distilling and brewing, industries worth >£6.2bn/year for the Scottish economy. Grain quality is affected by grain shape and the degree of grain skinning. Skinning happens when the grain husk is damaged during harvest exposing the grain below. The husk is formed by protective structures that enclose the flower, of which the lemma is one. In barley, the lemma has a long thin hair-like extension called an awn, which provides photosynthate to the grain, promoting grain yield. The removal of the awn during harvesting can result in damage to the husk (skinning), making the grain unsuitable for malting. We hypothesise that the shape of the lemma and awn can impact both grain shape and skinning frequency, and therefore influence grain quality. To test this hypothesis, you will evaluate the effect of different lemma and awn shape mutants on grain shape and skinning frequency. Alongside this you will use a range of molecular techniques to try to identify genes responsible for one of these lemma shape mutants. |
| **Proposed Project Start Date**  *Recommended June-July 2025 (max 8 weeks). We will ask you to confirm the project start and end dates after awards are made*. | 3rd June 2024 |

All projects approved by the EASTBIO Management Committee for fit to the REP’s remit will be advertised on the EASTBIO website and via our Twitter and LinkedIn, as well as via the local websites of our partner institutions. EASTBIO will contact you should there be any queries about your project before it is publicised.

The closing date for student applications is the **23 April 2024**.

Please note*:* The student and their supervisor are required to submit a brief report on the outcome of the REP to EASTBIO within *two* months of completion of the placement.

For any queries, email [**enquiries@eastscotbiodtp.ac.uk**](mailto:enquiries@eastscotbiodtp.ac.uk)**.**