**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** | Davide Bulgarelli |
| **Your affiliation (e.g. University of Dundee, SRCU, etc.) and staff webpage** | University of Dundee |
| **Your email** | d.bulgarelli@dundee.ac.uk |
| **REP Project title** | Novel insights into the genetic determinants of the rhizosphere microbiota |
| **Details of the local administrator to liaise with the EASTBIO team** (*name and contact email address*) | Dr Paul Davies  p.y.davies@dundee.ac.uk |
| **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* | The interface between plant roots and soil hosts a diverse microbial community, collectively referred to as the rhizosphere microbiota. Like microbes inhabiting the digestive tract of vertebrates, the rhizosphere microbiota can promote the growth, development and health of their host plants. Thus, the rhizosphere microbiota emerges as a renewable alternative to synthetic agrochemicals. The rhizosphere microbiota is not randomly assembled from soil. Rather, microbiota composition and function are controlled, at least in part, by plants. This project hypothesises that host immune responses are a determinant of this plant-mediated microbiota recruitment. Using the global crop barley as an experimental model, the student will test this hypothesis by investigating the expression of Pathogenesis Related (PR) genes, proxies for the activation of plant immune responses, in roots of seedlings hosting contrasting microbiotas. In the long term, findings of this project may contribute to the development of crops engaging more efficiently with soil microbes and, consequently, to sustainable agriculture. During this project, the student will be exposed to a wide range of experimental techniques including growth and maintenance of plants in glasshouse, RNA and cDNA preparation from plant specimens, quantitative Real-Time PCR as well as data visualisation and analysis in R. |
| **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*. | June 3rd, 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)**.**