# **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 15 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 Francesca Soutter |
| **Your affiliation (e.g. University of Dundee, SRCU, etc.) and staff webpage** | SRUC |
| **Your email** | Francesca.soutter@sruc.ac.uk |
| **REP Project title** | Expression of virulence factors in *Staphylococcus pseudintermedius* in dogs with canine atopic dermatitis |
| **Details of the local administrator to liaise with the EASTBIO team** (*name and contact email address*) | Sheila Davidson/Andra Dincu  [Sheila.davidson@sruc.ac.uk](mailto:Sheila.davidson@sruc.ac.uk)  Andra.dincu@sruc.ac.uk |
| **Project’s Strategic area** | **Bioscience for an integrated understanding of Health** |
| **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* | *Staphylococcus spp*. bacteria are commonly carried by dogs on their skin and mucosal surfaces. However, in some dogs affected by canine atopic dermatitis (CAD), these same bacteria are associated with infection and inflammation of the skin. Parallels can be drawn with humans with atopic dermatitis whose lesions are commonly colonised with *Staph. aureus*. The balance between host and microbial factors in tolerance *versus* dysbiosis is poorly understood, but host immune responses likely impact the skin microbiota and pathogenicity of microbes such as *Staph. pseudintermedius*. Whilst a number of studies have examined whether particular strains or isolates are associated with atopic dermatitis or development of pyoderma, few studies have examined whether known virulence gene expression is associated with disease. The aim of this study is to examine if staphylococcal virulence genes are differentially expressed in-vitro in staphylococci isolated from dogs with CAD compared with normal healthy controls and between carriage and lesions from dogs with CAD.  Staphylococcal isolates already collected from dogs with CAD and healthy controls will be utilised. The student will perform quantitative PCR (qPCR) for assessment of expression of leukotoxin genes and exfoliative toxin genes on cDNA prepared from total RNA extracted from log phase bacterial cultures. The project will provide opportunity to develop microbiology and molecular biology skills and to perform some data and statistical analysis with support from the supervisor. |
| **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*. | Monday 3rd June- Friday 12th July ( 6 weeks) |

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)**.**