Potential Supervisors

[Dr Philip Fowler](#), **Senior Researcher, Experimental Medicine.**

Philip has been at the University of Oxford since 2006. After working in the Department of Biochemistry studying the dynamics and function of a range of different membrane proteins using computer simulation, he moved to the John Radcliffe hospital in 2016 where he has established his own research group. He is part of a larger group that is applying genetics to Clinical Microbiology, thereby improving diagnostics. His research is focussed on (i) improving the large phenotypic and genetic pathogenic datasets that drives our translation efforts and (ii) developing methods that are able to predict *de novo* the effect of protein mutations on specific antibiotics.

Software Tools Developed

1. [AMyGDA](#) **– Automated Mycobacterial Growth Detection Algorithm**, is a Python module free to download for non-commercial use. As part of a large international project, CRyPTIC, we are collecting c. 50,000 samples from patients with tuberculosis worldwide over the next few years. Each sample will have its susceptibility to 14 different antibiotics tested using a bespoke 96-well plate. The rationale behind AMyGDA was to provide a consistent, unbiased method of reading the bacterial growth on the plates that could be used to quality control the measurement performed by the clinical microbiologists. Since AMyGDA allows the images to be composited, it facilitated the launch of [BashTheBug](#) in April 2017, a very successful Citizen Science project on the Zooniverse platform.

2. For a list of other smaller tools, please go to [this page](#).

Involvement of DTC Students

The problem behind AMyGDA was originally put to the DTC students as part of their Programming Module in October 2016.

Software-related Contributions to the Research Community

- 2017-2018   Awarded $20k by Microsoft to trial using Azure to teach in the DTC
- 2018-now   Member of the University Research Computing Board
- 2016-now   Chair of the University Advanced Research Computing Advisory Board
- 2014-now   Software Carpentry Instructor
- 2014-2015   Software Sustainability Institute Fellow