

**"The evolution of trade-offs in mating behaviour and physiology"**

**University of Plymouth, UK**

**School of Biological Sciences**

Applications are invited for a three-year **PhD studentship**, fully funded for EU/UK students.

The studentship will start on October 1st 2015.

Supervisors:

Dr Michael Thom (University of Plymouth)

Dr Mark Briffa (Plymouth)

Prof. Calvin Dytham (University of York)

Prof. Helen White-Cooper (University of Cardiff)

Summary:

For male animals, successful reproduction involves a number of key processes including mate searching, courtship, copulation, and sperm competition. Many of these are energetically expensive, time-consuming, or otherwise incompatible and as a result males are unlikely to be able to maximise performance in all of them simultaneously. How males value the different processes will depend on both physical and social environment, with males expected to plastically adjust their relative investment in each to maximise their reproductive success under prevailing conditions. Using the model species *Drosophila melanogaster*, this project will explore how these different components of the male reproductive process are traded off under simultaneous variation in biotic (e.g. population density, sex ratio) and abiotic (e.g. nutritional composition, food distribution) conditions. The student will be based at Plymouth, but will conduct histological work on the rate and fidelity of spermatogenesis with Prof. Helen White-Cooper at Cardiff. In addition to the empirical studies on behaviour and sperm production, the student will have the opportunity to learn the programming language C++, and will use this to develop an agent-based model exploring the evolution of ecological plasticity in mating behaviour and physiology - this will be overseen by Prof. Calvin Dytham at York.

If you wish to discuss this project further informally, please contact Dr Thom on [michael.thom@plymouth.ac.uk](mailto:michael.thom@plymouth.ac.uk).

See

<https://www.plymouth.ac.uk/student-life/your-studies/the-graduate-school/phd-students/hip-in-biological-sciences>

for further details

[michael.thom@plymouth.ac.uk](mailto:michael.thom@plymouth.ac.uk)