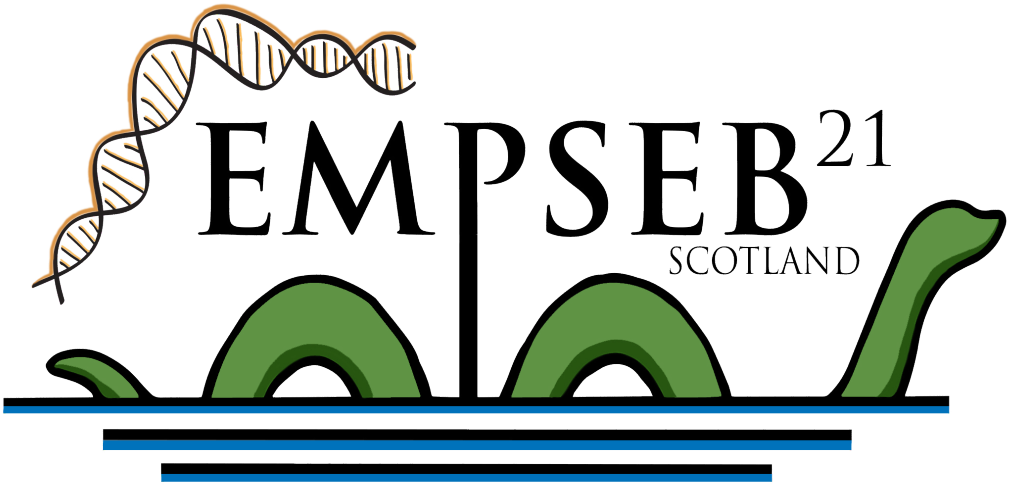
21st European Meeting of PhD Students in Evolutionary Biology

8th - 13th September 2015, Stirling, Scotland



Credits:
Becky Holland - Conference logo
Charlotte Repton - Abstract book cover

Dr. Hannah Dugdale

University of Sheffield

Wednesday 14:00-15:00

Hannah graduated with a PhD from University of Oxford in 2007, and she is currently a post-doctoral research fellow at University of Sheffield (UK) and University of Groningen (Netherlands). She is also an Associate Editor for BMC Zoology and a Review Editor for Frontiers in Genetics, Evolutionary and Population Genetics and Journal of Evolutionary Biology.

Hannah is interested in how animals can respond to environmental change and variation. Her research focuses on within- and between-individual differences in behavioural and life-history traits in variable, wild populations. Specifically, she is investigating how these differences evolved and how they are maintained. Currently, her research group focuses on five topics: (1) ageing in wild populations, (2) evolution of social behaviours, such as the heritability of cooperative breeding behaviour, (3) the socio-ecological correlates of promiscuity and how promiscuity is maintained, (4) causes and consequences of personality differences, (5) women in science: reasons for lower visibility of female scientists at evolutionary biology conferences.

Talk title: **Age-specific breeding success in two natural populations**

Ageing is the progressive loss of function undermining both the molecular building blocks of life and integrated organismal processes such as survival and fecundity. Ageing human populations are fascinated by this process, given that not all individuals age equally; however, the underlying principles of ageing are not fully understood. Why do individuals age the way they do? In this talk, I will investigate age-specific breeding success in terms of the Selection, Constraint, Restraint and Senescence Hypotheses. The Selection Hypothesis predicts between-individual variation arising from quality differences; the other hypotheses predict within-individual variation due to differing skills or physiological condition (Constraint), residual reproductive lifespan (Restraint), or somatic and reproductive investment (Senescence). In particular, I will look at why individuals senesce at different rates considering sex-specific effects and effects due to environmental conditions experienced early in life. I will present data from two natural populations: European badgers and Seychelles warblers. I will discuss how European badgers show an initial improvement in breeding success with age, followed by a later and steeper rate of reproductive senescence in males than in females. I will then present data on ageing in Seychelles warblers, where we not only have data on lifetime breeding success but also on biological markers of ageing using telomere lengths. This has revealed how telomere length is linked to early-life environmental conditions, which impacts on late-life survival. These results demonstrate the importance of investigating a comprehensive suite of factors in age-specific breeding success analyses, in order to fully understand evolutionary and population dynamics.

Workshop title: **Implicit bias and retention of women in science** (Thursday pm)