

ISAE New Investigator Award 2014

Dr Joanne Edgar, University of Bristol, United Kingdom

Jo Edgar is an outstanding new investigator who was awarded her PhD in 2012. The work conducted during her PhD and in her first post-doctoral role was in the relatively unexplored area of animal empathy. Jo is an empiricist at heart and has shown great tenacity and innovation in adapting new technologies to answer difficult questions. Her non-invasive monitoring of hen heart-rate and surface body-temperature changes have revealed the complexity underlying the hen-chick interaction in ways not previously conceived. She has shown that hens are aroused by mild chick distress and that hens react primarily to their cognitive perception of the chick's situation rather than to direct cues emanating from the chicks themselves. All of this work was accomplished during her PhD partly because she was so organised herself and partly because she recruited many summer students and undergraduates and inspired them to work alongside her.

Most recently she has completed a series of experiments examining how the arousal of the mother hen affects the stress response of chicks. No-one has previously thought to bring together work on animal empathy with work on social buffering. This work has both confirmed and strengthened the original findings regarding the hens' response to mild chick distress. In addition, this new work has shown that the stronger the reaction of the mother hen, the less calm are the chicks. The mother's emotional response therefore acts to invigorate rather than buffer the chicks' stress response. These results have profound implications for the field of applied ethology as very little work on the social transmission of distress has been conducted, despite its obvious relevance in many farming and laboratory contexts.

In 2015, Jo was awarded a BBSRC Future Leader Fellowship to apply her work on mother-chick interactions to improve the welfare of commercial hens.

Selected publications

- Edgar, J.L.**, Paul, E.S. & Nicol, C.J. 2013. Protective mother hens: Cognitive influences on the avian maternal response. *Animal Behaviour*, 86: 223-229.
- Edgar, J.L.**, Mullan, S.M., Pritchard, J.C., McFarlane, U. & Main, D.C.J. 2013. Towards a 'Good Life' for Farm Animals: Development of a Resource Tier Framework to Achieve Positive Welfare for Laying Hens. *Animals*, 3: 584-605.
- Edgar, J.L.**, Nicol, C.J., Pugh, C. & Paul, E.S. 2013. Surface temperature changes in response to handling in domestic chickens. *Physiology & Behavior*, 119:195-200.
- Edgar, J.L.**, Nicol, C.J., Clark, C.C.A. & Paul, E.S. 2012. Measuring empathic responses in animals. *Applied Animal Behaviour Science*, 138: 182-193.
- Edgar, J.L.**, Lowe, J., Paul, E. & Nicol, C.J. 2011. Avian maternal response to chick distress. *Proceedings of the Royal Society B*, 278: 3129-3134.