

Teaching evolution and genetics in international schools: A quantitative analysis

Lead Supervisor: Dr Momna Hejmadi, Department of Biology & Biochemistry
Co-Supervisors: Prof Laurence Hurst, Department of Biology & Biochemistry, and
Prof Mary Hayden, Department of Education

Project description:

A common perception is that many adults deny/reject the scientific consensus on biological evolution due to prior beliefs and psychological conflicts. What about the classroom? Several studies have sought to discover the reasons why evolution is so difficult for students to understand and accept, but few have attempted to find ways to improve the understanding of evolution. In our first randomised control trial of almost 2000 UK secondary school students, published in PLOS Biology, we showed that teaching genetics before teaching evolution is the best way to get children to understand evolution (1). Furthermore, we showed that among 14-16 year olds, an aptitude for science, rather than psychological beliefs, better explains the acceptance of scientific evolutionary concepts (2). A recent longitudinal study also suggests a large shift in attitudes towards acceptance of evolution among Mormon undergraduates in America, driven partly by a strong science education by their parents (3).

These studies pose several questions, particularly in a global classroom with diverse cultural and educational contexts. For instance, what factors influence the understanding and acceptance of evolution across different countries? Does an aptitude for science, rather than their cultural or psychological beliefs, influence their understanding and acceptance of evolution? This PhD project will aim to address these questions by conducting a longitudinal study across international schools with diverse cultural contexts.

The PhD student will join a dynamic and inter-disciplinary team led by Professor [Momna Hejmadi](#) and Professor [Laurence Hurst](#), based in the Milner Centre for Evolution. The project is in collaboration with [Professor Mary Hayden](#), Director of the Centre for the Study of Education in an International Context (CEIC) in the Department of Education at the University of Bath. The project will benefit from the strong network of international collaborations through the Milner Centre and CEIC, and opportunities for strengthening all aspects of research and professional skills.

Candidate:

Applicants should hold, or expect to receive, a First Class or high Upper Second Class UK Honours degree (or the equivalent qualification gained outside the UK) in a relevant subject. A master's level qualification would also be advantageous.

Applications:

Informal enquiries should be directed to Dr Momna Hejmadi, bssmvh@bath.ac.uk.

Formal applications should be made via the University of Bath's [online application form](#). On the application form, please ensure that you quote 'Evolution Education Trust' in the Finance section and the supervisor's name and project title in the 'Your research interests' section. Should you wish to be considered for more than project, quote the projects in order of preference and upload a separate personal statement relevant to each one.

Please see our Doctoral College website for [more information on how to apply](#) for a PhD at Bath.

Application deadline: 30 April 2019.

Interviews will take place in Bath on 14 June 2019.

Anticipated start date: 30 September 2019.

References:

Mead R, Hejmadi M, Hurst LD. (2018) Scientific aptitude better explains poor responses to teaching of evolution than psychological conflicts. *Nature Ecology & Evolution* 2, 388–394 (2018)
Mead R, Hejmadi M, Hurst LD. (2017) Teaching genetics prior to teaching evolution improves evolution understanding but not acceptance. *PLoS Biol.* 2017 May 23;15(5).
Bradshaw WS, Phillips AJ, Bybee SM, Gill RA, Peck SL, Jensen JL. (2018). A longitudinal study of attitudes toward evolution among undergraduates who are members of the Church of Jesus Christ of Latter-day Saints. *PLoS One.* Nov 7;13(11).