Why does open data matter and how can we make it a reality?

Geoffrey Boulton

(University of Edinburgh & The Royal Society)

The technologies and social changes of the information age not only challenge some of the basic norms that have made science a robust means of acquiring reliable knowledge, but also provide means of both addressing those challenges and enhancing scientific progress. Open data is at the heart of the challenge and the opportunity. We must ensure that the self-correcting property of science is maintained in the data-rich world; that intentional or unintended cherry-picking of data is avoided; that openness acts as a deterrent to fraud; that we respond to the increasing public demand to "see the evidence"; and that we exploit the potential of data-rich science to reveal unanticipated patterns in nature. Progress will also depend on a shift of culture, by scientists, by those that fund and employ them and by publishers, to one where data from publicly-funded research is seen as a public not private good and where the national value of international collaboration is recognized by governments. The ways in which data should be made intelligently open are discussed, the responsibilities and roles of actors in an international data ecology, and the solutions that are needed for an effective open data regime.