

# Results May Vary: Reproducibility, Open Science and All That Jazz

Carole Goble

School of Computer Science  
University of Manchester

**Abstract.** How could we evaluate research and researchers? Reproducibility underpins the scientific method: at least in principle if not practice. The willing exchange of results and the transparent conduct of research can only be expected up to a point in a competitive environment. Contributions to science are acknowledged, but not if the credit is for data curation or software. From a bioinformatics view point, how far could our results be reproducible before the pain is just too high? Is open science a dangerous, utopian vision or a legitimate, feasible expectation? How do we move bioinformatics from one where results are post-hoc made reproducible, to pre-hoc born reproducible? And why, in our computational information age, do we communicate results through fragmented, fixed documents rather than cohesive, versioned releases? In this talk, which I gave as a keynote at the 2013 joint conference Intelligent Systems in Molecular Biology / European Conference on Computational Biology, I will explore these questions drawing on 20 years of experience in both the development of technical infrastructure for Life Science and the social infrastructure in which Life Science operates.