**Panel:** Innovation on Digital Curation

# Data transparency in scientific publishing

Thomas Lemberger**,** EMBO

**Abstract**

Scientific progress depends on efficient sharing of reliable research findings. This implies transparency and openness, which make the scientific process traceable and accelerate the dissemination of research and thus the pace of scientific discovery. But is also requires critical evaluation and quality control steps to assess whether new claims are supported by evidence and represent true novel discoveries.

There are inherent tradeoffs between the need for immediacy and openness, the necessity of a scalable quality control process and the essential role of trust based on the responsible conduct of research by scientists.

In the life sciences, scientific journals disseminate peer-reviewed research on a large scale (more than 1 million articles per year). Moving scientific publishing towards more transparency raises important questions. How can journals add transparency to the peer-review and the editorial selection process? How can data integrity verifications be conducted in a scalable way? How will new technologies help to make published data and methods more discoverable and reproducible?

The rise of large-scale data mining and artificial intelligence will undoubtedly open new avenues in the way science is shared and published. Editors may transform into ‘knowledge architects’ while journals will become interoperable platforms that are readable both by machines and humans. As we may transition towards a quasi-immediate open sharing of data, it is also crucial to remember that costly human expertise, creativity and time-consuming critical scrutiny irreplaceably remain at the heart of the scientific enterprise.