In recent years the open access movement has broadened into a movement for open science, which aims not only to improve exchange between researchers but to strengthen the links between academics and the societies of which they are an integral part. However, progress towards this goal has been slowed by the tenacious roots of our established forms of research assessment, which place great emphasis on publication and the hierarchy of journals. The San Francisco Declaration on Research Assessment (DORA) is working to unlock the true potential of open science by opening up more effective and more holistic approaches to determining what it is we value in scientific research.