Replication efforts vary across and within scientific disciplines in terms of their frequency, the prestige they carry, who is performing them (the same or independent scientists), how promptly they follow-up on proposed effects and other discoveries, what designs they use, how they are reported (or not reported), and how disagreements between original observations and replication efforts are settled, integrated, debated, or ignored. There is increasing concern that the reproducibility of many published research claims, in particular in the biomedical and social sciences, is low, and numerous calls have been made to improve this track record. The Opening Address will provide an overview of the empirical evidence on replication and reproducible research practices and will propose potential improvements that may enhance the reproducibility and validity of research results.