Measurement is at the heart of quantum mechanics and consequently also at the core of quantum simulation on quantum computers. This rapidly evolving field has recently produced a glut of publications with wide ranging claims from both academic and industrial groups. This makes the literature difficult to navigate and find common threads.

In this talk, I will use measurement to underline common themes and ground the literature in a common reality. We highlight the usefulness of phase estimation even for noisy intermediate quantum computers and clarify that variational quantum simulation methods are an extension of phase estimation rather than a replacement. (Received September 24, 2018)