Messenger RNA offers unparalleled breadth and depth for the discovery and development of novel drugs and vaccines. The potential to direct specific tissue translation of both wild type and engineered intracellular, membrane-bound, and secreted proteins (and combinations thereof), coupled with rapid transition from preclinical to clinical development, has enabled Moderna and its partners to progress several development candidates into the clinic. This potential is being realized by the parallel development of different modalities (e.g. prophylactic and therapeutic vaccines, paracrine and systemic drugs). This talk will review the scientific and engineering accomplishments enabling pharmaceutical development.