

Abstract Submitted  
for the OSS19 Meeting of  
The American Physical Society

**The key ingredient in order finding: quantum Fourier transform through examples** BRADLEY LOCKHART, MELLITA CARAGIU, Ohio Northern University — This work is the outcome of our consulting several quantum computing books and articles in an attempt to find works that achieve a balance between technical detail and expository quality. It is part of our effort of putting together an introduction to particular core ideas of quantum computing theory that is also accessible to undergraduates. The main theme considered here is the quantum Fourier transform as an essential ingredient in obtaining the period of a sequence of natural numbers (otherwise known as order finding). The issue arises in Shor's algorithm of factoring large numbers, a task that it is believed that quantum computers would perform with a much higher efficiency than classical ones.

Bradley Lockhart  
Ohio Northern University

Date submitted: 26 Feb 2019

Electronic form version 1.4