# Extreme Scaling and Performance Across Diverse Architectures

**Dr. Nick Frontiere**
Argonne National Laboratory

## Abstract

Sophisticated simulations of the growth of structure in the Universe have become an integral part of analyzing and making cosmological inferences with high-quality data from modern large-scale structure surveys, and their importance will continue to increase in the future as surveys grow and improve. The Hardware/Hybrid Accelerated Cosmology Code (HACC) was developed to deliver the capability of sustained performance on architecturally diverse supercomputers in order to address this numerical challenge.