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Computational Science with the Titan Supercomputer: Early Outcomes and Lessons Learned[1] JACK WELLS, Oak Ridge National Laboratory — Modeling and simulation with petascale computing has supercharged the process of innovation and understanding, dramatically accelerating time-to-insight and time-to-discovery. This presentation will focus on early outcomes from the Titan supercomputer at the Oak Ridge National Laboratory. Titan has over 18,000 hybrid compute nodes consisting of both CPUs and GPUs. In this presentation, I will discuss the lessons we have learned in deploying Titan and preparing applications to move from conventional CPU architectures to a hybrid machine. I will present early results of materials applications running on Titan and the implications for the research community as we prepare for exascale supercomputer in the next decade. Lastly, I will provide an overview of user programs at the Oak Ridge Leadership Computing Facility with specific information how researchers may apply for allocations of computing resources.

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