Workshop on Representative Applications  
WRAp 2017 Workshop Welcome Message

Application performance is a problem with many dimensions, especially in cluster computing where the variety of hardware platforms, runtime systems, programming models, compilers, parallel algorithms, and topologies is growing without bound. At the same time, many of the critical applications of cluster computing are large, complex codes that are difficult to modify, update and verify quickly. As these two conditions progress, representative applications that can be quickly adapted to new environments, and allow discoveries to readily influence related applications, become ever more valuable tools.

As representative applications (often called mini-applications, proxies or benchmarks) proliferate and become common tools for acceptance testing, benchmarking, and optimization, new challenges emerge. In order to serve as effective tools, they must retain the critical properties of their parent application in the face of optimization, porting and even re-implementation. Development of such representative applications requires methods and tools for identifying the critical aspects of a given code, or class of codes, and also for verifying that the proxy effectively models the target behavior.

This year, eight high-quality papers exploring all aspects of representative applications have been accepted by the workshop. Each paper has been reviewed by a renowned technical committee, and the reviews contained valuable feedback on the work described in each submission. The papers cover the full scope of representative application use: assessing the representativeness of the applications, experimenting with different computing strategies such as reduced precision or programming models, and introducing new mini-apps to cover different application domain or to represent different parent applications.

We are excited to be holding WRAp at IEEE Cluster this year, and helping bring together the global community of researchers building and using representative applications to advance scientific discovery and application performance.

David Beckingsale, Lawrence Livermore National Laboratory, Workshop Co-Chair  
Tom Scogland, Lawrence Livermore National Laboratory, Workshop Co-Chair