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Ryan Poffenbarger*, poffenbarger16@mail.vmi.edu, and **Christopher Siebert**, siebertcm16@mail.vmi.edu. *From Start to Finish: Linux Clusters for Applied Mathematics.*

In this session, we discuss the cadet-built computational cluster “RAT,” created for applied mathematics research at the Virginia Military Institute. Repurposing 20 commodity-grade desktop PCs, we constructed a fully-functional, distributed-memory Linux cluster. RAT serves as a practical learning lab for cadets interested in scientific computing at a large scale, replicating supercomputing concepts difficult to explain on a single machine. In concluding this session, we present parallel processing examples in applied mathematics, and their respective benchmarks, to emphasize RAT’s strong performance relative to its low cost. (Received September 15, 2014)