RESEARCH FOCUS ON DR. RONG GE

Supercomputers are crucial to scientific discovery and technology innovation critical to national security and human society. However, such computers are increasingly constrained by the power requirement and the necessity to limit the power density of components and server rooms. Comprising millions of processor cores and memory modules, today's supercomputers already consume megawatts of power and cost millions of dollars annually for operation; to meet an insatiate demand for performance from mission-critical applications, future systems will consist of even more components and consume more power.

Dr. Rong Ge of Clemson University received funding from NSF to develop enabling technology for energy efficient computing on supercomputers. Targeting at emerging systems built of power-aware CPUs and general purpose graphic processing units, her team investigates how to utilize all available power to

PROJECT TITLE
NSF CAREER: Cross-Layer Power-Bounded High Performance Computing on Emerging and Future Heterogeneous Computer Clusters

EDUCATION
This project integrates educational components that engage graduate and undergraduate students in innovative HPC research, and broaden the participation of underrepresented and K-12 students.

AWARD ABSTRACT
https://nsf.gov/awardsearch/showAward?AWD_ID=1551511

maximize performance and power efficiency at the device and system levels. Dr. Ge has been promoting energy efficiency in general, and teaching and researching green computing on mobile devices, personal computers, and supercomputers.

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Photo: Dr. Ge and her graduate students at Clemson working on the project.