

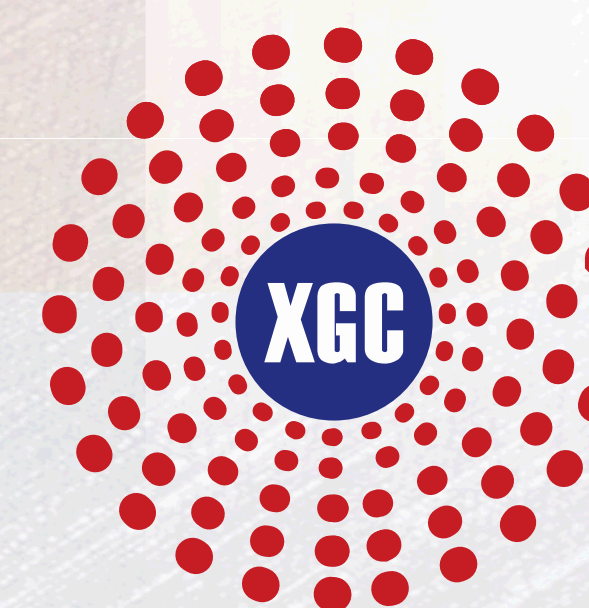
Extreme-Scale Computing Grand Challenge (XGC)



LABORATORY DIRECTED RESEARCH & DEVELOPMENT



EXTREME-SCALE COMPUTING GRAND CHALLENGE

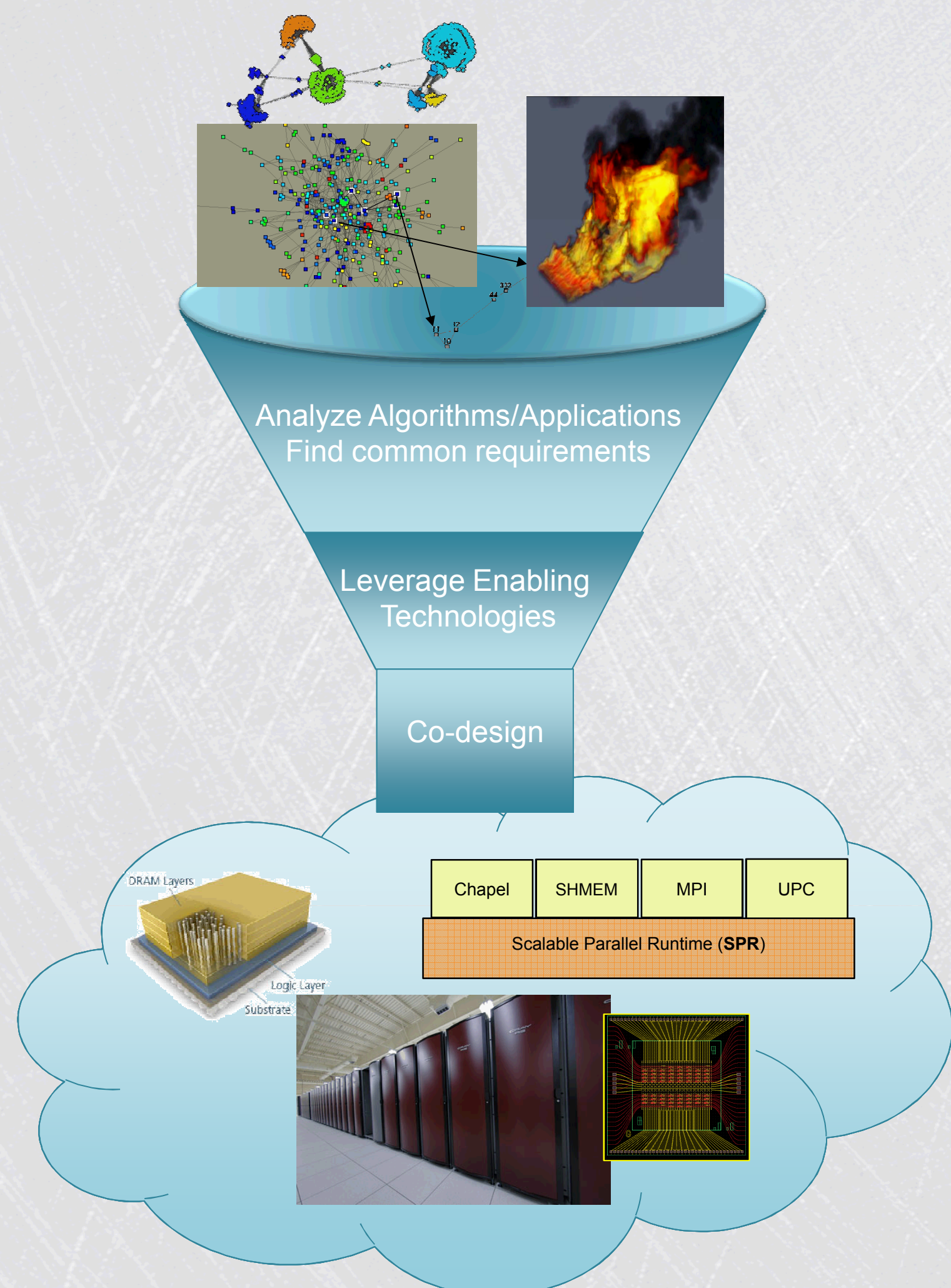


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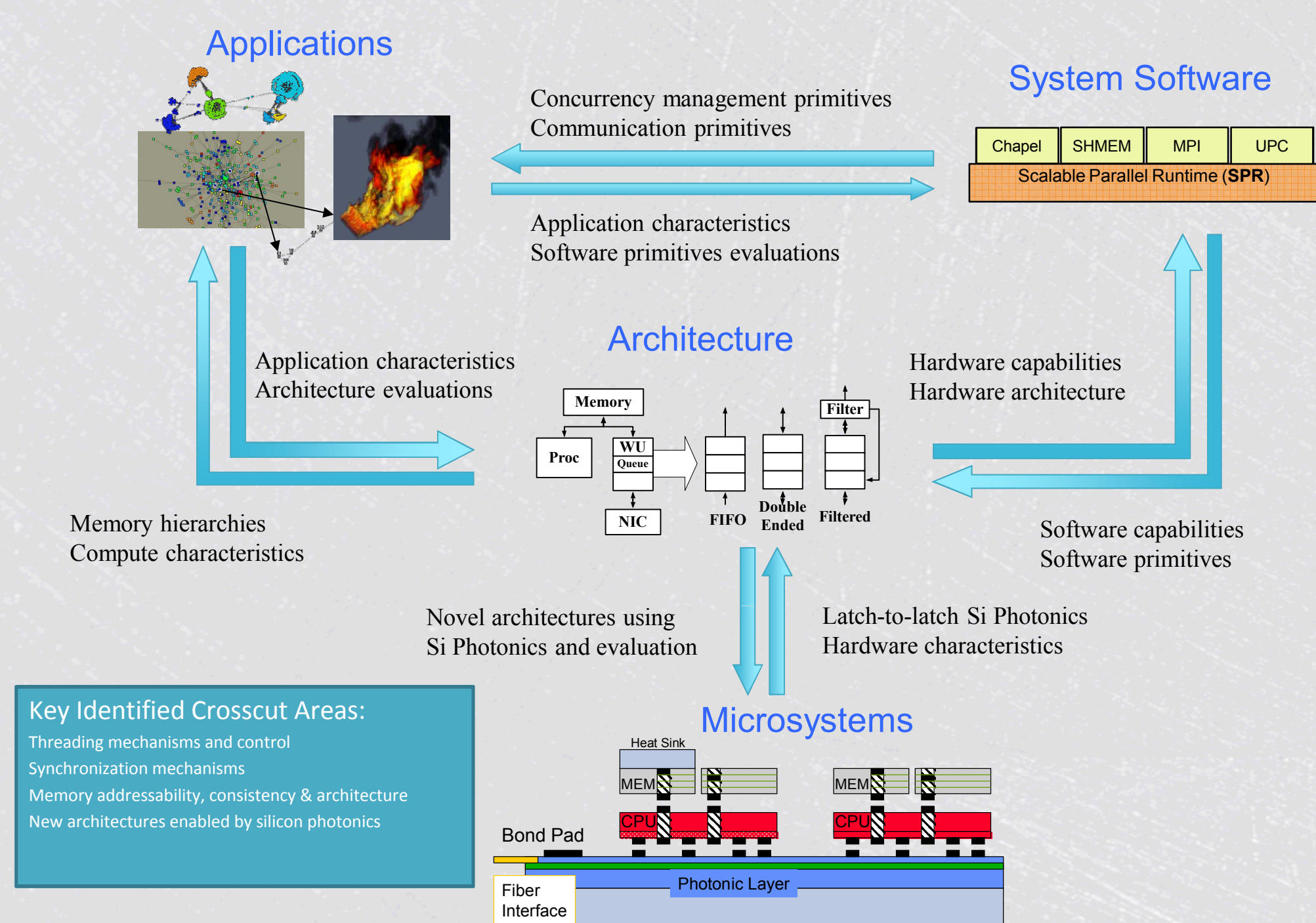
Challenge

Develop the key system architecture concepts that will enable a unified physics/data analytics computing platform or determine what gaps prevent it



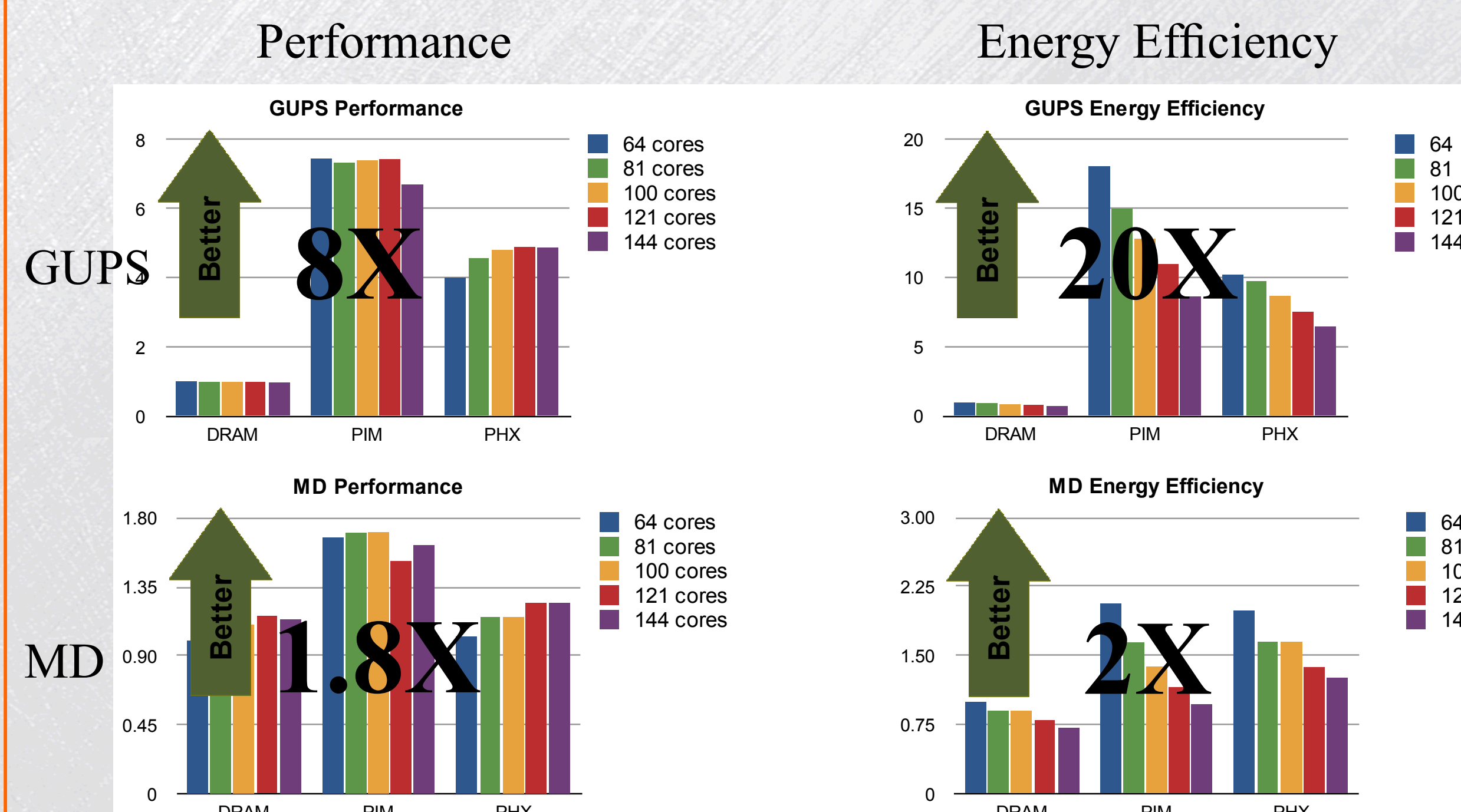
Approach

Full System Expertise a Key Strength



Results

Data movement dominates application performance, energy budgets, and future system capabilities. XGC address low-energy data movement in a full system context: microelectronics/photonics, architecture, system software, and applications.



Significance

- Potential for 2+ orders of magnitude improvement in data movement capability per Joule.
- Return to balanced systems and applications across both application spaces
- Early (complete!) exemplar of codesign for HPC