SOS27: Abstract for session "Incorporating New Technologies and Emerging Workloads into Large Scale HPC in the Next Decade"

As we approach the limits of Moore's Law, the exponential growth in performance per watt that has driven supercomputing advancements for decades has plateaued. Traditional semiconductor scaling is no longer yielding the same rapid improvements in computing power and energy efficiency that it once did. At the same time, emerging workloads—most notably Artificial Intelligence (AI) and Quantum Computing—are compelling traditional HPC facilities to rethink their deployment strategies. This session will explore the evolving landscape of supercomputing facilities in the context of these challenges, focusing on emerging technologies, new deployment strategies, and perspectives from facilities on the impact of these new workloads.