

Productive Programming Models for Exascale

August 14-15, 2012

Portland Marriott City Center, Portland, OR
3rd Floor – River Ballroom

Tuesday, August 14, 2012

Time	Topic	Speaker/Facilitator
7:30 – 8:00	<i>Registration</i>	
8:00 – 8:30	Welcome and Introductions	Darren Kerbyson
8:30 – 12:00	SESSION 1: Programming Models	Daniel Chavarria
8:30 – 9:00	“Exascale: your opportunity to create a decent HPC language”	Brad Chamberlain
9:00 – 9:30	“Programming & Execution Models for Exascale: Abundant Parallelism in the Presence of Constrained Resources”	Daniel Chavarría
9:30 – 10:00	“Performance, Correctness, and Programmability: Challenges for Parallel Programming at Exascale”	William Gropp
10:00 – 10:45	“Multi-Level Programming Paradigms for Exascale Computing”	Serge Petiton
10:45 – 11:15	“ REX : RE thinking the “ X ” in the “MPI+ X ” for Exascale Nodes”	Yonghong Yan
11:15 – 12:00	“TASCEL: Concrete Ingredients for Flexible Programming Abstractions”	Sriram Krishnamoorthy
12:00 – 13:30	Poster Introduction Presentations - Working Lunch	ALL
13:30 – 16:45	SESSION 2: Applications	Abhinav Vishnu
13:30 – 14:00	“Exascale Challenges for Programming Models in Fusion Energy Sciences”	William Tang
14:00 – 14:30	“Novel Parallel Algorithms for High-Accuracy Coupled-Cluster Calculations”	Karol Kowalski
14:30 – 15:00	“Anticipated Programming Models for Scale-Bridging Materials Science at Exascale”	Timothy Germann
15:00 – 15:45	“Programming Environment for Multi-Petascale and Exascale Simulations in the Frame of Large Scale Scientific Simulation Codes in Reactor Physics”	Jérôme Dubois
15:45 – 16:15	“HPC Challenges in Oil & Gas Upstream Scientific Applications”	Terrence Liao
16:15 – 16:45	“A GA Based Approach to Automated Data Management for Parallel Quantum Monte Carlo Applications”	P. Saday Sadayappan
16:45 – 19:00	Poster Session – Rogue Room	ALL
19:00 – 20:30	Keynote Presentation – Working Dinner	
	“The Advancement or Lack of Advancement in Programming Models Over the Past 45 Years”	John Levesque

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Time	Topic	Speaker/Facilitator
7:30 – 8:00	Registration	
8:00 – 8:30	Day 2 Objectives	TP Straatsma
8:30 – 12:15	SESSION 3: Cross-cutting: Resiliency, Power and Performance	Sriram Krishnamoorthy
8:30 – 9:00	“Energy Efficient and Reliable Programming Models at Exascale”	Abhinav Vishnu
9:00 – 9:30	“Programming Models Extensions for Resilience at Extreme Scale”	Pedro Diniz
9:30 – 10:00	TBD	Karen Karavanic
10:00 – 10:45	“Poking the Soft Underbelly of Programmer Productivity on Exascale”	George Almasi
10:45 – 11:15	TBD	Pavan Balaji
11:15 – 11:45	TBD	Doug Carmean
11:45 – 12:15	“Avalanche: A Flow-Graph Framework for Simplifying the Use of Active Messages”	Jeremiah Willcock
12:15 – 13:30	Discussion of Panel Topics – Working Lunch	ALL
13:30 – 18:00	SESSION 4: Cross-cutting: Languages and Applications	Darren Kerbyson
13:30 – 14:00	“Charj: Compiler Supported Language with an Adaptive Runtime”	Sanjay Kale
14:00 – 14:30	“Productivity, Portability and Performance for Heterogeneous Systems”	Michael Wolfe
14:30 – 15:00	“Designing a Unified Programming Model for Heterogeneous machines”	Michael Garland
15:00 – 15:45	“Algorithms and programming models for coupled-cluster methods”	Jeff Hammond
15:45 – 16:15	“Super Instruction Architecture for Exascale Software Engineering”	Beverly Sanders
16:15 – 16:45	“Preparing Quantum Monte Carlo for Exascale Era”	Jeongnim Kim
16:45 – 17:15	TBD	Robert Harrison
17:15 – 18:15	Panel Discussion	Fred Johnson
18:15 – 18:30	Closing Remarks - Adjourn	TP Straatsma