Tuesday, June 21, 2016

**Exascale Architectures: Disruptions, Denials & Directions**

June 21, 2016, 08:30 am - 10:00 am

10:00 am - 11:00 am Coffee Break

Panorama 1, Forum

*To Get the Highest Price/Performance/Watt... It's All about the Memory*

08:30 am - 09:00 am

Steve Pawlowski, Micron


09:00 am - 09:30 am

Prof. Dr. John Goodacre, University of Manchester

*Computing in 2030 Intel's View through the Crystal Ball*

09:30 am - 10:00 am

Al Gara, Intel

**Connected & Autonomous Vehicles: Driving with Data & Analytics**

June 21, 2016, 08:30 am - 10:00 am

10:00 am - 11:00 am Coffee Break

Panorama 2, Forum

*Introduction*

08:30 am - 08:35 am

Andreas Mai, Cisco

*The Car of the Future: The Most Powerful Computer You Will Ever Own*

08:35 am - 08:55 am

Carlo Nardone, NVIDIA

*Connected Vehicle Analytics: Enabling New Business Models & Innovation*

08:55 am - 09:15 am

Norm Marks, SAS

*Holistic Connectivity The Vehicle as a Part of the Internet*

09:15 am - 09:35 am

Alexander Klotz, Continental

*Big Data or Big Databases? The Octo Way*

09:35 am - 09:55 am

Daniele Tortora, Octo Telematics

*Questions & Answers*

09:55 am - 10:00 am

**IDC Research on HPC Use**

June 21, 2016, 08:30 am - 09:15 am

Panorama 3 INDUSTRY TRACK, Forum

Kevin Monroe, IDC

Steve Conway, IDC
Research Posters - Award & Presentations

June 21, 2016, 08:30 am - 10:00 am
10:00 am - 11:00 am Coffee Break
Analog 1+2, Forum

Welcome & Research Poster Award Ceremony
08:30 am - 08:40 am
Prof. Dr. Vladimir Voevodin, MSU

ISC 2016 Award Winning Research Poster Presentation
08:40 am - 08:55 am
Dr. Julian Kunkel, DKRZ

(01) Infrastructure for Evaluating Emerging Multi-Level, Heterogeneous Memory Systems
08:55 am - 10:00 am
Dr. Edgar A. León, LLNL

(02) Solving Communication-Intensive Problems Efficiently Using On-Chip Mesh Interconnection Networks
08:55 am - 10:00 am
Sebastian Klaassen, University of Vienna

08:55 am - 10:00 am
Dr. Julian Kunkel, DKRZ

(04) Some Experimental Results on the Performance of Intel MKL Sparse Matrix-Vector Multiplication on Intel Multicore & the Xeon Phi
08:55 am - 10:00 am
Prof. Dr. Walid Abu-Sufah, University of Illinois at Urbana-Champaign

(05) The AlgoWiki Project: An Open Encyclopedia of Parallel Algorithmic Features
08:55 am - 10:00 am
Dr. Alexander Antonov, MSU

(06) Data Merging for the Cultural Heritage Imaging Based on Chebfun Approach
08:55 am - 10:00 am
Mariem El Afrit, UPMC

(07) Acceleration of Ultrasound Wave Propagation Using a Cluster of GPUs
08:55 am - 10:00 am
Filip Vaverka, Brno University of Technology

(08) Predicting I/O Performance in HPC Using Artificial Neural Networks
08:55 am - 10:00 am
Jan Fabian Schmid, University of Hamburg

(09) Performance & Scalability Evaluation of Particle-in-Cell Code PICADOR on CPUs & Intel Xeon Phi Coprocessors
08:55 am - 10:00 am
Dr. Iosif Meyerov, Lobachevsky State University of Nizhni Novgorod

(10) Use of Coprocessors of Various Types for Solving Global Optimization Problems
08:55 am - 10:00 am
Vladislav Sovrasov, Lobachevsky State University of Nizhni Novgorod

(11) Open Fortran Compiler
08:55 am - 10:00 am
Craig Griffiths, Codethink

(12) High Performance Molecular Dynamics in Cloud Infrastructure with SR-IOV & GPUTrack
08:55 am - 10:00 am
Andrew Younge, Indiana University

(13) Optimization of Electron Repulsion Integral Calculation in GAMESS Quantum Chemistry Software
08:55 am - 10:00 am
Dr. Vladimir Mironov, MSU

(14) Decentralizing the Cloud for Energy-Efficiency: The Qarnot Approach
08:55 am - 10:00 am
Dr. Yanik Ngoko, Qarnot Computing

BoF 04
June 21, 2016, 08:30 am - 09:30 am
Substanz 1+2, Forum
Dr. Martin Schulz, LLNL

PhD Forum Posters, Research Posters & HPC in Asia Posters
June 21, 2016, 08:30 am - 05:15 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Foyer 0, Forum

Industrie 4.0 Smart Factory
June 21, 2016, 09:15 am - 10:00 am
10:00 am - 11:00 am Coffee Break
Panorama 3 INDUSTRY TRACK, Forum
Prof. Dr.-Ing. Thomas Bauernhansl, Fraunhofer IPA & University of Stuttgart

BoF 05
June 21, 2016, 09:30 am - 10:30 am
10:00 am - 11:00 am Coffee Break
Substanz 1+2, Forum
Dr. Frank Baetke, HPE
Charlie Carroll, Cray

Research Poster Reception
June 21, 2016, 10:00 am - 11:00 am
10:00 am - 11:00 am Coffee Break
Analog 1+2, Forum
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<tr>
<td>June 21, 2016, 10:00 am - 05:20 pm</td>
<td>Exhibitor Forum 02</td>
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<tr>
<td>10:00 am - 11:00 am</td>
<td>Coffee Break</td>
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<td>12:30 pm - 01:45 pm</td>
<td>Lunch</td>
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Booth #500, Hall 3.Via

Social Media #JustStartToday
10:00 am - 10:20 am
Kimberly McMahon, McMahon Consulting

Fujitsu: Many-Core Experience at Fujitsu
10:20 am - 10:40 am
Dr. Pierre Lagier, Fujitsu

10:40 am - 11:00 am
Axel Rosenberg, SanDisk

Bright Computing: Containers, Clouds & Combos: Emerging Delivery Models for HPC
11:00 am - 11:20 am
Martijn de Vries, Bright Computing

D-Wave Systems: Quantum Computing: The Last Frontier
11:20 am - 11:40 am
Dr. Denny Dahl, D-Wave Systems

ExaScaler/PEZY Computing: ZettaScaler-1.6, the Immersion Liquid Cooling Platform System
11:40 am - 12:00 pm
Motoaki Saito, ExaScaler

IBM: Architecting HPC Clusters for Performance
12:00 pm - 12:20 pm
Brett Newman, IBM

NVIDIA: The Expanding Role of GPUs in HPC
12:20 pm - 12:40 pm
Dr. Peter Messmer, NVIDIA

NetApp: Enterprise Grade Storage Building Blocks in the DevOps World
12:40 pm - 01:00 pm
Scott Pfeiffer, NetApp

ClusterVision: Changing the Paradigm of HPC with OpenStack
01:00 pm - 01:20 pm
Samira Mellenbergh, ClusterVision

DDN Storage: Introducing a New IO Tier for Parallel File Systems
01:20 pm - 01:40 pm
Dr. James Coomer, DDN

Intel: Fuel Your Insight with Intel® Scalable System Framework
01:40 pm - 02:00 pm  
Stephan Gillich, Intel  

**Samsung Semiconductor Europe: Samsung Memory Update**  
02:00 pm - 02:20 pm  
Thomas Arenz, Samsung  

**HGST: Active Archiving with Object Storage**  
02:20 pm - 02:40 pm  
Heinz Esterlechner, HGST  

**Adaptive Computing: Ease of Use in HPC Moab Delivers Increased User Productivity in Research & Industry**  
02:40 pm - 03:00 pm  
Bernhard Schott, Adaptive Computing  

**SGI: HPC Matters**  
03:00 pm - 03:20 pm  
Dr. Eng Lim Goh, SGI  

**Hewlett Packard Enterprise: An Innovative HPC & Big Data Portfolio**  
03:20 pm - 03:40 pm  
Sanjeet Singh, Hewlett Packard Enterprise  

**Oracle: EDR InfiniBand in Large, Multi-Tenant Clusters**  
03:40 pm - 04:00 pm  
Ola Torudbakken, Oracle  

04:00 pm - 04:20 pm  
David Ingersoll, Penguin Computing  

**Omnibond: 2 Projects of Interest: 1) Burst Buffer Over Object Storage Featuring the 2TIERSTM Project with EMC & 2) Complete HPC in the Cloud with CloudyCluster**  
04:20 pm - 04:40 pm  
Sorin Faibish, EMC  
Boyd Wilson, Omnibond  

**CoolIT Systems: Enabling High Density Chip-to-Atmosphere Data Center Solutions**  
04:40 pm - 05:00 pm  
Geoff Lyon, CoolIT Systems  

**UNIVA: Use Cases For Containers in HPC**  
05:00 pm - 05:20 pm  
Daniel Gruber, UNIVA  

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**Exhibition**  
June 21, 2016, 10:00 am - 06:00 pm  
10:00 am - 11:00 am Coffee Break  
12:30 pm - 01:45 pm Lunch  
02:45 pm - 03:30 pm Coffee Break  
04:30 pm - 05:15 pm Coffee Break  
Exhibition Hall, Hall 3.Via
**BoF 06**

June 21, 2016, 10:15 am - 11:15 am
10:00 am - 11:00 am Coffee Break
Booth #220, Hall 3.Via
Dr. Toni Collis, EPCC
Carolyn Coke Reed Devany, Data Vortex Technologies
Jacqueline H. Chen, Sandia National Laboratories

**Climate & Weather**

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
Panorama 1, Forum

**Introduction**
11:00 am - 11:05 am
Prof. Dr. Thomas Ludwig, DKRZ

**Making the Case for a Step Change Investment in High Performance Computing – a Met Office Case Study**
11:05 am - 11:30 am
Dave Underwood, Met Office

**Using HPC to Predict Extreme Weather**
11:30 am - 11:55 am
Dr. Peter Bauer, ECMWF

**Towards Extreme-Scale Weather/Climate Simulation: The Post K Supercomputer & Our Challenges**
11:55 am - 12:20 pm
Dr. Hisashi Yashiro, RIKEN AICS

**Discussion**
12:20 pm - 12:30 pm

**Neurorobotics & Supercomputing: The Human Brain Project & Other Human & Humanoid Approaches**

June 21, 2016, 11:00 am - 12:30 pm
10:00 am - 11:00 am Coffee Break
12:30 pm - 01:45 pm Lunch
Panorama 2, Forum

**Neurorobotics in the Human Brain Project**
11:00 am - 11:30 am
Dr. Florian Röhrbein, TU München

**Modeling the Brain from Molecular Images**
11:30 am - 12:00 pm
Dr. Klaus Maier-Hein, University of Heidelberg

**Designing & Modeling Cognitive Humanoids**
12:00 pm - 12:30 pm
Dr.-Ing. Nikolaus Vahrenkamp, KIT
### Applications in Industrie 4.0

**June 21, 2016, 11:00 am - 12:30 pm**

10:00 am - 11:00 am Coffee Break  
12:30 pm - 01:45 pm Lunch

Panorama 3 INDUSTRY TRACK, Forum

#### Airbus Manufacturing Challenges for Industrie 4.0
11:00 am - 11:30 am  
Gerd Büttner, Airbus

#### Industrie 4.0 Applications on the Shop Floor
11:30 am - 12:00 pm  
Michael Lickefett, Fraunhofer IPA

#### Industrie 4.0 & Industrial Internet in Action: Collaboration, Use Cases & Best Practices
12:00 pm - 12:30 pm  
Dirk Slama, Bosch SI

### Research Papers 02 Autotuning & Thread Mapping

**June 21, 2016, 11:00 am - 12:30 pm**

10:00 am - 11:00 am Coffee Break  
12:30 pm - 01:45 pm Lunch

Analog 1+2, Forum

#### An Analytical Model-Based Auto-Tuning Framework for Locality-Aware Loop Scheduling
11:00 am - 11:30 am  
Sandra Wienke, RWTH Aachen University

#### Performance, Design & Autotuning of Batched GEMM for GPUs
11:30 am - 12:00 pm  
Dr. Azzam Haidar, University of Tennessee

#### TCU: A Multi-Objective Hardware Thread Mapping Unit for HPC Clusters
12:00 pm - 12:30 pm  
Ravi Kumar Pujari, TU München
### Research Papers 03  Data Locality & Decomposition
June 21, 2016, 11:00 am - 12:30 pm

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<td>Lunch</td>
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Substanz 1+2, Forum

- **An Efficient Parallel Load-Balancing Strategy for Orthogonal Decomposition of Geometrical Data**
  11:00 am - 11:30 am
  Bruno Magalhaes, EPFL

- **Parallel Community Detection Algorithm Using a Data Partitioning Strategy with Pairwise Subdomain Duplication**
  11:30 am - 12:00 pm
  Alok Choudhary, Northwestern University

- **TiDA: High-Level Programming Abstractions for Data Locality Management**
  12:00 pm - 12:30 pm
  Dr. Didem Unat, Koç University

### BoF 07
June 21, 2016, 11:15 am - 12:15 pm

- **Booth #220, Hall 3.Via**
  
  - Dr. Bill Feiereisen, Modelado.Org
  - Prof. Dr. Siegfried Benkner, University of Vienna
  - Prof. Dr. Vivek Sarkar, Rice University
  - Dr. Tim Mattson, Intel
  - Dr. Romain Cledat, Intel

### BoF 08
June 21, 2016, 12:15 pm - 01:15 pm

- **Booth #220, Hall 3.Via**
  
  - Thomas Gibbs, NVIDIA

### BoF 09
June 21, 2016, 01:15 pm - 02:15 pm

- **Booth #220, Hall 3.Via**
  
  - Prof. Dr. Dieter Kranzlmüller, LMU & LRZ
  - Prof. Dr. Wilco Hazeleger, Netherlands eScience Center
  - Julio Serje, UNISDR
  - Dr. Antonio Parodi, CIMA Research Foundation
  - Prof. Dr. Hans-Peter Bunge, LMU
  - Dr. Sanna Sorvari, Finnish Meteorological Institute
**Distinguished Speakers**

**June 21, 2016, 01:45 pm - 03:15 pm**

12:30 pm - 01:45 pm Lunch  
02:45 pm - 03:30 pm Coffee Break

**Panorama 1, Forum**

- **The Path to Capable Exascale Computing**  
  01:45 pm - 02:15 pm  
  Dr. Paul Messina, ANL

- **The Next Flagship Supercomputer in Japan**  
  02:15 pm - 02:45 pm  
  Prof. Dr. Yutaka Ishikawa, RIKEN AICS

- **The New Sunway Supercomputer System at Wuxi**  
  02:45 pm - 03:15 pm  
  Prof. Dr. Guangwen Yang, National Supercomputer Center at Wuxi

**Performance Modeling & Prediction**

**June 21, 2016, 01:45 pm - 02:45 pm**

12:30 pm - 01:45 pm Lunch  
02:45 pm - 03:30 pm Coffee Break

**Panorama 2, Forum**

- **Do You Want FLOPS with That?**  
  01:45 pm - 02:05 pm  
  Dr. Boyana Norris, University of Oregon

- **Integrated Performance & Power Modeling**  
  02:05 pm - 02:25 pm  
  Dr. Adolfy Hoisie, PNNL

- **An Overview of Static & Dynamic Techniques for Automatic Performance Modeling**  
  02:25 pm - 02:45 pm  
  Prof. Dr. Torsten Hoefler, ETH Zurich
Interactive Engineering Technologies
June 21, 2016, 01:45 pm - 02:45 pm
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
Panorama 3 INDUSTRY TRACK, Forum

HPC for 3D Electromagnetic Simulations  From Workstation to Cluster & Cloud
01:45 pm - 02:05 pm
Dr. Felix Wolfheimer, CST

CAE as a Service  Experiences & Challenges for Customers & Service Providers
02:05 pm - 02:25 pm
Jens Tamm, CPU 24/7

Ubiquitous Engineering Workflows powered with HPC
02:25 pm - 02:45 pm
Sebastian Pena Serna, Independent Expert

Research Papers 04  Scalable Applications
June 21, 2016, 01:45 pm - 02:45 pm
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
Analog 1+2, Forum

OpenAtom: Scalable Ab-Initio Molecular Dynamics with Diverse Capability
01:45 pm - 02:15 pm
Prof. Dr. Laxmikant Kale, University of Illinois at Urbana-Champaign

SPRITE: A Fast Parallel SNP Detection Pipeline
02:15 pm - 02:45 pm
Vasudevan Rengasamy, Pennsylvania State University

Research Papers 05  Machine Learning
June 21, 2016, 01:45 pm - 02:45 pm
12:30 pm - 01:45 pm Lunch
02:45 pm - 03:30 pm Coffee Break
Substanz 1+2, Forum

Towards Machine Learning on the Automata Processor
01:45 pm - 02:15 pm
Tom Tracy II, University of Virginia

AutoMOMML: Automatic Multi-Objective Modeling with Machine Learning
02:15 pm - 02:45 pm
Prasanna Balaprakash, ANL
**BoF 10**
June 21, 2016, 02:15 pm - 03:15 pm
02:45 pm - 03:30 pm Coffee Break
Booth #220, Hall 3.Via
Dr.-Ing. Bernd Mohr, JSC
Prof. Dr. Jesús Labarta, BSC
Dr. Mike Dewar, NAG

**BoF 11**
June 21, 2016, 03:15 pm - 04:15 pm
02:45 pm - 03:30 pm Coffee Break
Booth #220, Hall 3.Via
Dr. Mark Bull, EPCC
Dr. Valeria Bartsch, Fraunhofer ITWM
Prof. Dr. Jesús Labarta, BSC

**Panel: Parallel Programming**
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Panorama 1, Forum
Prof. Dr. Bill Gropp, University of Illinois at Urbana-Champaign
Brad Chamberlain, Cray
Dr. Mike Heroux, Sandia National Laboratories
Dr. Jeffrey Vetter, ORNL & Georgia Institute of Technology
Dr. Rosa M Badia, BSC

**HPC Benchmarking**
June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break
Panorama 2, Forum

*The HPL Benchmark: Past, Present & Future*
03:30 pm - 03:45 pm
Prof. Dr. Jack Dongarra, University of Tennessee & ORNL

*The HPCG Benchmark: Challenges It Presents to Current & Future Systems*
03:45 pm - 04:00 pm
Dr. Mike Heroux, Sandia National Laboratories

*HPGMG: A Supercomputer Benchmark & Metric*
04:00 pm - 04:15 pm
Dr. Mark Adams, LBNL

*Graph500: A Challenging Benchmark for High Performance Data Analytics*
04:15 pm - 04:30 pm
Prof. Dr. David A. Bader, Georgia Institute of Technology
Europe’s HPC Ecosystem: The Key Players

June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break

Panorama 3 INDUSTRY TRACK, Forum

The European Cloud Initiative & the European HPC Strategy
03:30 pm - 03:50 pm
Gustav Kalbe, EC

High-Performance Computing at PRACE
03:50 pm - 04:10 pm
Dr. Sylvie Joussaume, LSCE

Development of HPC Technology to Serve the European HPC Ecosystem
04:10 pm - 04:30 pm
Jean-Francois Lavignon, Bull/Atos

Research Papers 06 Datacenters & Cloud

June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break

Analog 1+2, Forum

Supercomputing Centers & Electricity Service Providers: A Geographically Distributed Perspective on Demand Management in Europe & the United States
03:30 pm - 04:00 pm
Dr. Tapasya Patki, LLNL

Resource Management for Running HPC Applications in Container Clouds
04:00 pm - 04:30 pm
Dr. Michela Taufer, University of Delaware

Research Papers 07 Communication Runtime

June 21, 2016, 03:30 pm - 04:30 pm
02:45 pm - 03:30 pm Coffee Break
04:30 pm - 05:15 pm Coffee Break

Substanz 1+2, Forum

INAM^2: InfiniBand Network Analysis & Monitoring with MPI
03:30 pm - 04:00 pm
Dr. Khaled Hamidouche, Ohio State University

Comparing Runtime Systems with Exascale Ambitions Using the Parallel Research Kernels
04:00 pm - 04:30 pm
Jeff R. Hammond, Intel
BoF 12
June 21, 2016, 04:15 pm - 05:15 pm
04:30 pm - 05:15 pm Coffee Break
Booth #220, Hall 3.Via
Arno Kolster, PayPal
Ryan Quick, PayPal

Tuesday Keynote
June 21, 2016, 05:15 pm - 06:00 pm
04:30 pm - 05:15 pm Coffee Break
Panorama 2, Forum

Tuesday Keynote: Towards Exascale Simulation of Turbulent Combustion
Jacqueline H. Chen, Sandia National Laboratories

ISC Happy Hour
June 21, 2016, 06:00 pm - 07:00 pm
Panorama 1-3 Foyer, Forum

Vendor Parties
June 21, 2016, 07:00 pm - 10:00 pm
Various Locations, Others