

Argonne National Laboratory at SC17
Conference Dates: November 12-17, 2017 • Exhibition Dates: November 13-16, 2017

SC17 area leads

- Emerging Technologies – Franck Cappello (chair)
- Panels – Lois Curfman McInnes (vice chair)
- Awards – Paul Hovland (vice chair)

Technical papers committee

- Applications track – Anshu Dubey (chair), Stefan Wild, and Hal Finkel
- Cloud computing track – Kate Keahey (chair)
- Data analytics, visualization and storage track – Tom Peterka
- State of the Practice track – Daniel Katz (chair, MCS faculty guest)
- Programming systems track – Pavan Balaji

Full Schedule

Pre-Conference

Saturday, November 11

Tutorial:

In Situ Software Defined Visualization Hands-On Lab: Using OSPRay API with Data-Distributed Applications
TIME: 10:15AM – 11:45AM • LOCATION: Intel HPC Developer Conference; Sheraton Denver Downtown (Colorado Room)
PRESENTERS: Will Usher, Jefferson Amstutz, **Silvio Rizzi**, and Jim Jeffers

Technical Lectures:

Benefits of Intel Memory Drive Technology for Scientific Applications
TIME: 3:15PM– 3:45PM • LOCATION: Intel HPC Developer Conference; Sheraton Denver Downtown (Silver Room)
PRESENTERS: Vladimir Mironov, **Yuri Alexeev**, Andrey Kudryavtsev, and Igor Chernykh

Interactive In Situ Visualization of LAMMPS simulations with OSPRay
TIME: 3:45PM– 4:15PM • LOCATION: Intel HPC Developer Conference; Sheraton Denver Downtown (Tower Court A)
PRESENTERS: **Silvio Rizzi**, Will Usher, and **Joseph A. Insley**

Poster:

MPI/OpenMP Parallelization of the Hartree-Fock Method for the Intel Xeon Phi Processor
TIME: 5:30PM– 7:30PM • LOCATION: Intel HPC Developer Conference; Sheraton Denver Downtown (South Convention Lobby)
PRESENTERS: Vladimir Mironov and **Yuri Alexeev**

Sunday, November 12

Workshop Papers:

Paper: Scalable In Situ Analysis of Molecular Dynamics Simulations
Workshop: In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV 2017)
TIME: 10:30AM –10:55AM • LOCATION: 605
AUTHORS: **Preeti Malakar, Christopher Knight, Todd Munson, Venkatram Vishwanath, and Michael E. Papka**

Paper: In Situ Workflows at Exascale: System Software to the Rescue
Workshop: In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV 2017)
TIME: 1:55PM –2:20PM • LOCATION: 605
AUTHORS: **Matthieu Dreher, Swann Perarnau, Tom Peterka, Kamil Iskra, and Pete Beckman**

Paper: Position paper - Proposal for a Scientific Software Lifecycle Model

Workshop: The 2017 International Workshop on Software Engineering for High Performance Computing in Computational and Data-Enabled Science and Engineering (SE-CoDeSE 2017)

TIME: 4:15PM–4:30PM • *LOCATION:* 501

AUTHORS: **Anshu Dubey** and **Lois Curfman McInnes**

Paper: Towards Self-Verification in Finite Difference Code Generation

Workshop: First International Workshop on Software Correctness for HPC Applications (Correctness 2017)

TIME: 12:12PM–12:29PM • *LOCATION:* 702

AUTHORS: Jan Hueckelheim, Ziqing Luo, Fabio Luporini, Navjot Kukreja, Michael Lange, Gerard Gorman, Stephen Siegel, Matthew Dwyer, and **Paul Hovland**

Workshop Lightning Talks:

Topic: Flexible In Situ Visualization of LAMMPS Simulations

Workshop: In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV 2017)

TIME: 11:45AM–11:50AM • *LOCATION:* 605

AUTHORS: Will Usher, Jefferson Amstutz, **Joseph A. Insley**, Aaron Knoll, **Michael E. Papka**, Valerio Pascucci, **Silvio Rizzi** and **Venkatram Vishwanath**

Topic: Parallel Streaming for In Transit Analysis with Heterogeneous Data Layout

Workshop: In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV 2017)

TIME: 2:50PM–2:55PM • *LOCATION:* 605

AUTHORS: **Thomas Marrinan**, Greg Eisenhauer, Matthew Wolf, **Joseph A. Insley**, **Silvio Rizzi** and **Michael E. Papka**

Workshops:

[Eighth Annual Workshop for the Energy Efficient HPC Working Group \(EE HPC WG\)](#)

TIME: 9:00AM–5:30PM • *LOCATION:* 704-706

ORGANIZERS: Michael Patterson, Torsten Wilde, Natalie Bates, Anna Maria Bailey, David Martinez, David Grant, James H. Laros, James Rogers, Ramkumar Nagappan, Michael J. Ellsworth, Steven Martin, Dale Sartor, Bilel Hadri, Andres Marquez, Nicolas Dubé, Josip Loncaric, **Susan Coghlan**, Greg Koenig, Ladina Gilly, Daniel Hackenberg, Fumiyoshi Shoji, Thomas Durbin, and Wu Feng

[Seventh Workshop on Python for High-Performance and Scientific Computing \(PyHPC 2017\)](#)

TIME: 9:00AM–5:30PM • *LOCATION:* 710-712

ORGANIZERS: Andreas Schreiber, **William Scullin**, Bill Spotz, and Rollin Thomas

[In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization \(ISAV 2017\)](#)

TIME: 9:00AM–5:30PM • *LOCATION:* 605

ORGANIZERS: Wes Bethel, Patrick O’Leary, Gunther Weber, **Nicola Ferrier**, Matthew Wolf, and Earl Duque

[Women in HPC: Diversifying the HPC Community](#)

TIME: 9:00AM–5:30PM • *LOCATION:* 503-504

ORGANIZERS: Toni Collis, Alison Kennedy, Sunita Chandrasekaran, Patricia Damkroger, Kelly Gaither, Rebecca Hartman-Baker, Daniel Holmes, Adrian Jackson, Kim McMahon, **Misbah Mubarak**, and Lorna Rivera

[Workshop on Exascale MPI \(ExaMPI\)](#)

TIME: 9:00AM–5:30PM • *LOCATION:* 603

ORGANIZERS: Ryan Gran, Patrick Bridges, Anthony Skjellum, Purushotham Bangalorre, Ron Brightwell, **Pavan Balaji**, Masamichi Takagi, and Geoffroy Vallee

[Fourth SC Workshop on Best Practices for HPC Training](#)

TIME: 2:00PM–5:30PM • *LOCATION:* 601

ORGANIZERS: Scott Lathrop, Jay Alameda, Carl Albing, Nia Alexandrov, Maxim Belkin, Dana Brunson, **Richard Coffey**, Fernanda Foertter, Richard Gerber, Bilel Hadri, Rebecca Hartman-Baker, Susan Mehlinger, Julia Mullen, Henry Neeman, Maria-Ribera Sancho, Gowtham Shankara, Nitin Sukhija, Robert Whitten, and Vassil Alexandrov

[The 2017 International Workshop on Software Engineering for High Performance Computing in Computational and Data-Enabled Science and Engineering \(SE-CoDeSE 2017\)](#)

TIME: 2:00PM–5:30PM • *LOCATION:* 501

ORGANIZERS: Jeffrey C. Carver, Neil Chue Hong, Selim Ciraci, and **Daniel S. Katz** (MCS faculty guest)

Network Research Exhibition:

Topic: Orchestrating Intercontinental Advance Reservations with Software-Defined Exchanges

Workshop: The 4th International Workshop on Innovating the Network for Data Intensive Science (INDIS)

TIME: 2:30PM – 2:50PM • *LOCATION:* 607

SPEAKERS: Joaquin Chung, **Rajkumar Kettimuthu**, Nam Pho, Russ Clark, and Henry Owen

Topic: Calibers: A Bandwidth Calendaring Paradigm for Science Workflows

Workshop: The 4th International Workshop on Innovating the Network for Data Intensive Science (INDIS)

TIME: 2:50PM – 3:10PM • *LOCATION:* 607

SPEAKERS: Eric Pouyoul, Mariam Kiran, Nathan Hanford, Dipak Ghosal, Fatemah Alali, **Raj Kettimuthu**, and Ben Mackcrane

Topic: Towards a Smart Data Transfer Node

Workshop: The 4th International Workshop on Innovating the Network for Data Intensive Science (INDIS)

TIME: 4:40PM – 5:00PM • *LOCATION:* 607

SPEAKERS: **Zhengchun Liu**, **Rajkumar Kettimuthu**, **Ian Foster**, and **Pete Beckman**

Topic: Transferring a Petabyte in a Day

Workshop: The 4th International Workshop on Innovating the Network for Data Intensive Science (INDIS)

TIME: 5:00PM – 5:20PM • *LOCATION:* 607

SPEAKERS: **Rajkumar Kettimuthu**, **Zhengchun Liu**, **Ian Foster**, **Katrin Heitmann**, and **Franck Cappello**

Tutorials:

[Compression of Scientific Data](#)

TIME: 8:30AM – 12:00PM • *LOCATION:* 401

PRESENTERS: **Franck Cappello** and Peter Lindstrom

[Large Scale Visualization with ParaView](#)

TIME: 8:30AM – 5:00PM • *LOCATION:* 403

PRESENTERS: Kenneth Moreland, W. Alan Scott, David E. DeMarle, **Joseph A. Insley**, John Patchett, and Jon Woodring

[Cloud Computing for Science and Engineering](#)

TIME: 8:30AM – 5:00PM • *LOCATION:* 203

PRESENTERS: **Ian Foster**, Dennis Gannon, and Vani Mandava

Monday, November 13

Plenary Panel:

[HPC Connects Plenary: The Century of the City](#)

TIME: 5:30PM – 6:30PM • *LOCATION:* Mile High Ballroom

PARTICIPANTS: **Pete Beckman**, **Charlie Catlett**, and more

Workshop Papers:

Paper: PoLiMEr: An Energy Monitoring and Power Limiting Interface for HPC Applications

Workshop: Fifth International Workshop on Energy Efficient Supercomputing (E2SC)

TIME: 10:30AM – 11:00AM • *LOCATION:* 506

AUTHORS: **Ivana Marincic**, **Venkatram Vishwanath**, and Henry Hoffmann

Paper: CoSS: Proposing a Contract-Based Storage System for HPC

Workshop: 2nd Joint International Workshop on Parallel Data Storage and Data Intensive Scalable Computing Systems (PDSW-DISCS)

TIME: 2:30PM – 3:00PM • *LOCATION:* 601

AUTHORS: **Matthieu Dorier**, Matthieu Dreher, **Tom Peterka**, and **Robert Ross**

Paper: Toward Scalable Monitoring on Large-Scale Storage for Software Defined Cyberinfrastructure

Workshop: 2nd Joint International Workshop on Parallel Data Storage and Data Intensive Scalable Computing Systems (PDSW-DISCS)

TIME: 4:20PM – 4:45PM • *LOCATION:* 601

AUTHORS: Arnab K. Paul, **Ryan Chard**, Kyle Chard, Steven Tuecke, Ali R. Butt, and **Ian Foster**

Paper: Performance and Power Characteristics and Optimizations of Hybrid MPI/OpenMP LULESH Miniapps under Various Workloads

Workshop: Fifth International Workshop on Energy Efficient Supercomputing (E2SC)

TIME: 4:30PM – 5:00PM • *LOCATION:* 506

AUTHORS: **Xingfu Wu**, **Valerie Taylor**, Jeanine Cook, and Tanner Juedeman

Paper: UMAMI: A Recipe for Generating Meaningful Metrics through Holistic I/O Performance Analysis

Workshop: 2nd Joint International Workshop on Parallel Data Storage and Data Intensive Scalable Computing Systems (PDSW-DISCS)

TIME: 4:45PM – 5:10PM • *LOCATION:* 601

AUTHORS: Glenn K. Lockwood, **Shane Snyder**, Wucherl Yoo, **Kevin Harms**, **Zachary Nault**, Suren Byna, **Philip Carns**, and Nicholas J. Wright

Paper: Launching MPI Applications inside MPI Applications

Workshop: 12th Workshop on Workflows in Support of Large-Scale Science (WORKS 2017)

TIME: TBA • *LOCATION:* 501

AUTHORS: **Matthieu Dorier**, **Justin M. Wozniak**, and **Robert Ross**

Workshops:

[LLVM-HPC2017: Fourth Workshop on the LLVM Compiler Infrastructure in HPC](#)

TIME: 9:00AM – 5:30PM • *LOCATION:* 502

ORGANIZER: **Hal Finkel**

[HPC Systems Professional Workshop](#)

TIME: 9:00AM – 5:30PM • *LOCATION:* 603

ORGANIZERS: Randy Herban, Isaax Traxler, Jenett Tillotson, **William Scullin**, Paul Peltz, David Clifton, and Alex Younts

Tutorials:

[In Situ Analysis and Visualization with SENSEI](#)

TIME: 8:30AM – 12:00PM • *LOCATION:* 406

PRESENTERS: E. Wes Bethel, Andrew C. Bauer, Brad Whitlock, Matthew Wolf, Burlen Loring, and **Silvio Rizzi**

[Better Scientific Software](#)

TIME: 8:30AM – 12:00PM • *LOCATION:* 303

PRESENTERS: David E. Bernholldt, **Anshu Dubey**, Michael A. Heroux, and Alicia Klinvex

[Advanced MPI Programming](#)

TIME: 8:30AM – 5:00PM • *LOCATION:* 404

PRESENTERS: **Pavan Balaji**, William Gropp, Torsten Hoefler, and **Rajeev Thakur**

[Parallel I/O in Practice](#)

TIME: 8:30AM – 5:00PM • *LOCATION:* 403

PRESENTERS: **Rob Latham**, **Rob Ross**, Brent Welch, and Katie Antypas

Exhibition Hall

Technical Talks:

Data-Driven Scientific Discoveries on the ALCF Theta Supercomputing System

TIME: 7:15PM – 8:00PM • *LOCATION:* Intel Booth

SPEAKER: **Venkat Vishwanath**

Early Results on the Argonne Xeon Phi Cray XC-40 System Theta

TIME: 8:00PM – 9:00PM • *LOCATION:* Intel Booth

SPEAKER: **Scott Parker**

TRIP: An Ultra-Low Latency, TeraOps/s Reconfigurable Inference Processor for Real-Time Multi-Layer Perceptrons

TIME: 8:00PM – 9:00PM (includes table discussion) • *LOCATION:* Intel Booth

SPEAKERS: Ahmed Sanaullah, Chen Yang, **Yuri Alexeev**, **Kazutomo Yoshii**, and Martin Herbordt

Student Cluster Competition:

TIME: 9:30AM – 5:30PM (Highest Linpack runs); competition ends Wednesday at 5:30PM • LOCATION: Exhibition Hall

TEAM: Illinois Institute of Technology/Maine South High School/Adlai E. Stevenson High School team

TEAM ADVISORS: **Ben Allen**, **Ioan Raicu**, and **William Scullin**

Tuesday, November 14

Invited Talk:

[The U.S. D.O.E. Exascale Computing Project – Goals and Challenges](#)

TIME: 10:30AM – 11:15AM • LOCATION: Mile High Ballroom

SPEAKER: **Paul Messina**

Papers:

[Probabilistic Guarantees of Execution Duration for Amazon Spot Instances](#)

TIME: 4:30PM – 5:00PM • LOCATION: 405-406-407

AUTHORS: Rich Wolski, John Brevik, **Ryan Chard**, and Kyle Chard

HPC Impact Showcase:

[Impact of the DOE and NCI Partnership on Precision Oncology](#)

TIME: 10:30AM – 11:00AM • LOCATION: 501-502

SPEAKER: **Rick Stevens**

Birds of a Feather:

[LLVM in HPC: Uses and Desires](#)

TIME: 12:15PM – 1:15PM • LOCATION: 601

SESSION LEADERS: Jim Cownie and **Hal Finkel**

[Software Engineers: Careers in Research](#)

TIME: 12:15PM – 1:15PM • LOCATION: 603

SESSION LEADERS: Neil Chue Hong, **Daniel Katz** (MCS faculty guest), Jay Jay Billings, Alys Brett, Jeffrey Carver, Catherine Jones, Lauren Michael, David Perez-Suarez, and Andrew Turner

[PowerAPI, GEOPM and Redfish: Open Interfaces for Power/Energy Measurement and Control](#)

TIME: 5:15PM – 7:00PM • LOCATION: 710-712

SESSION LEADERS: Ryan Grant, Jonathan Eastep, Jeff Autor, Nicolas Dube, **Vitali Morozov**, Todd Rosedahl, Steve Martin, James Laros, III, Stephen Oliver, Ramkumar Nagappan, and Vinanti Phadke

[Software Engineering and Reuse in Computational Science and Engineering](#)

TIME: 5:15PM – 7:00PM • LOCATION: 601

SESSION LEADERS: David Bernholdt (lead), Maxim Belkin, Alys Brett, Jeffrey Carver, Neil Chue Hong, Mike Folk, Gerard Gorman, William Gropp, Michael Heroux, **Daniel Katz** (MCS faculty guest), David Keyes, Scott Lathrop, Randall LeVeque, James Lin, **Lois Curfman McInnes**, and Kengo Nakajima

[Reconfigurable Computing in Exascale](#)

TIME: 5:15PM – 7:00PM • LOCATION: 405-406-407

SESSION LEADERS: Sven Karlsson, David Donofrio, John Leidel, Hans-Christian Hoppe, Marie-Christine Sawley, **Kazutomo Yoshii**, Kentaro Sano, and **Franck Cappello**

[Cross-Layer Allocation and Management of Hardware Resources in Shared Memory Nodes](#)

TIME: 5:15PM – 7:00PM • LOCATION: 607

SESSION LEADERS: Emmanuel Jeannot, **Pete Beckman**, and Brice Goglin

[Usability, Scalability and Productivity on Many-Core Processors: Intel Xeon Phi](#)

TIME: 5:15PM – 7:00PM • LOCATION: 607

INVITED SPEAKER: **Yuri Alexeev**

Scientific Visualization & Data Analytics Showcase:

[Visualizing Silicene Growth Through Island Migration and Coalescence](#)

TIME: 8:30AM – 5:00PM • LOCATION: Mile High Prefunction

AUTHORS: **Joseph A. Insley, Mathew J. Cherukara, Badri Narayanan, Henry Chan, and Subramanian Sankaranarayanan**

Posters:

MPI/OpenMP Parallelization of the Hartree-Fock Method for the Second Generation Intel Xeon Phi

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Vladimir Mironov, Alexander Moskovsky, Kristopher Keipert, Michael D’Mello, Mark Gordon, and **Yuri Alexeev**

[NOTE: SC17 Best Poster Nominee]

PaSTRI: A Novel Data Compression Algorithm for Two-Electron Integrals in Quantum Chemistry

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Ali Murat Gok, Dingwen Tao, Sheng Di, Vladimir Mironov, **Yuri Alexeev**, and **Franck Cappello**

TRIP: An Ultra-Low Latency, TeraOps/s Reconfigurable Inference Processor for Multi-Layer Perceptrons

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Ahmed Sanaulah, Chen Yang, **Yuri Alexeev**, **Kazutomo Yoshii**, and Martin C. Herbordt

Understanding How OpenCL Parameters Impact on Off-Chip Memory Performance of FPGA Platforms

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Yingyi Luo, **Zheming Jin**, **Kazutomo Yoshii**, and Seda Ogren-ci-Memik

Exploring the Performance of Electron Correlation Method Implementations on Kove XPDs

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: **Colleen Bertoni**, **Brian Toonen**, **William Allcock**, Spencer Pruitt, and Mark Gordon

ACM Student Research Competition:

Applying Image Feature Extraction to Cluttered Scientific Repositories

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Emily Herron, Tyler Skluzacek, **Ian Foster**, and Kyle Chard

Finding a Needle in a Field of Haystacks: Metadata Search for Distributed Research Repositories

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Anna Blue Keleher, Kyle Chard, **Ian Foster**, Ioan Raicu, and Alex Orhean

Exhibition Hall

Talks:

Interactive In Situ Visualization of LAMMPS simulations with OSPRay

TIME: 2:00PM – 2:15PM; Table Topic 2:15 – 4:00PM • LOCATION: Intel Booth Nerve Center

SPEAKER: **Silvio Rizzi**

Where Optane Fits in HPC

TIME: 12:00PM – 1:00PM (includes table discussion) • LOCATION: Intel Booth

SPEAKERS: Vladimir Mironov, **Yuri Alexeev**, and Andrey Kudryavtsev

Wednesday, November 15

Papers:

[Embracing a New Era of Highly Efficient and Productive Quantum Monte Carlo Simulations](#)

TIME: 3:30PM – 4:00PM • LOCATION: 402-403-404

AUTHORS: Amrita Mathuriya, **Ye Luo**, Raymond C. Clay III, **Anouar Benali**, Luke Shulenburger, and Jeongnim Kim

[An Efficient MPI/OpenMP Parallelization of the Hartree-Fock Method for the Second Generation of Intel Xeon Phi](#)

TIME: 4:00PM – 4:30PM • LOCATION: 402-403-404

AUTHORS: Vladimir Mironov, Alexander Moskovsky, Kristopher Keipert, Michael D’Mello, Mark Gordon, and **Yuri Alexeev**

Session: [Machine Learning and Quantum Computing](#)
TIME: 1:30PM – 3:00PM • LOCATION: 301-302-303
SESSION CHAIR: **Stefan Wild**

Birds of a Feather:

[The Internet of Things and HPC: Are They Teaming Up to Work Together?](#)

TIME: 12:15PM – 1:15PM • LOCATION: 701
SESSION LEADERS: **Pete Beckman** and Nicolás Erdödy

[Contemporary Design of Supercomputer Experiments](#)

TIME: 12:15PM – 1:15PM • LOCATION: 710-712
SESSION LEADERS: Dmitry Duplyakin, **Jed Brown**, **Stefan Wild**, **Prasanna Balaprakash**, Paul Constantine, Jeffrey Hokanson, and Felix Wolf

[Distributed and Heterogeneous Programming in C++ for HPC](#)

TIME: 12:15PM – 1:15PM • LOCATION: 405-406-407
SESSION LEADERS: **Hal Finkel** and Michael Wong

[Practical Reproducibility by Managing Experiments Like Software](#)

TIME: 12:15PM – 1:15PM • LOCATION: 601
SESSION LEADERS: Ivo Jimenez, Carlos Maltzahn, Jay Lofstead, Michael Heroux, and **Kate Keahey**

[Modeling and Simulation of Communication in HPC Systems](#)

TIME: 12:15PM – 1:15PM • LOCATION: 402-403-404
SESSION LEADERS: **Misbah Mubarak**, Nikhil Jain, and Jeremiah Wilke

[High Performance Computing Education in US Data Science](#)

TIME: 5:15PM – 7:00PM • LOCATION: 703
SESSION LEADERS: Weijia Zu, Kelly Gaither, **Daniel Katz** (MCS faculty guest), Ann Stapleton, Gopalan Oppiliappan, Mark Speck, Hui Zhang, and Rosalia Gomez

[Big Data and Exascale Computing \(BDEC\) Community Report](#)

TIME: 5:15PM – 7:00PM • LOCATION: 710-712
SESSION LEADERS: Jack Dongarra, Mark Asch, and **Pete Beckman**

Scientific Visualization & Data Analytics Showcase:

[Visualizing Silicene Growth Through Island Migration and Coalescence](#)

TIME: 8:30AM – 5:00PM • LOCATION: Mile High Prefunction
AUTHORS: **Joseph A. Insley**, **Mathew J. Cherukara**, **Badri Narayanan**, **Henry Chan**, and **Subramanian Sankaranarayanan**

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Understanding How OpenCL Parameters Impact on Off-Chip Memory Performance of FPGA Platforms

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Exploring the Performance of Electron Correlation Method Implementations on Kove XPDs
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Finding a Needle in a Field of Haystacks: Metadata Search for Distributed Research Repositories
TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom
AUTHORS: Anna Blue Keleher, Kyle Chard, **Ian Foster**, Ioan Raicu, and Alex Orhean

Exhibition Hall

Going Smart and Deep on Materials at ALCF
TIME: 1:45PM – 2:30PM • LOCATION: Department of Energy Booth (#613)
SPEAKERS: **Ian Foster**

An Efficient MPI/OpenMP Parallelization of the Hartree-Fock Method for the Second Generation of KNL
TIME: 3:00PM – 4:00PM (includes table discussion) • LOCATION: Intel Booth
SPEAKERS: Vladimir Mironov, Alexander Moskovsky, Kristopher Keipert, Michael D’Mello, Mark Gordon, and **Yuri Alexeev**

Thursday, November 16

Papers:

[Predicting the Performance Impact of Different Fat-Tree Configurations](#)

TIME: 10:30AM – 11:00AM • LOCATION: 402-403-404

AUTHORS: Nikhil Jain, Abhinav Bhatele, Louis Howell, David Boehme, Ian Karlin, Edgar A. Leon, **Misbah Mubarak**, Noah Wolfe, Todd Gamblin, and Matthew Leininger

[Run-to-Run Variability on Xeon Phi Based Cray XC Systems](#)

TIME: 11:30AM – 12:00PM • LOCATION: 402-403-404

AUTHORS: **Sudheer Chunduri**, **Kevin Harms**, **Scott Parker**, **Vitali Morozov**, Samuel Oshin, Naveen Cherukuri, and **Kalyan Kumaran**

[Why is MPI So Slow? Analyzing the Fundamental Limits in Implementing MPI-3.1](#)

TIME: 3:30PM – 4:00PM • LOCATION: 405-406-407

AUTHORS: **Ken Raffenetti**, **Abdelhalim Amer**, **Lena Oden**, Charles Archer, Wesley Bland, Hajime Fujita, **Yanfei Guo**, Tomislav Janjusic, Dmitry Durnov, Michael Blocksome, **Min Si**, **Sangmin Seo**, Akhil Langer, Gengbin Zheng, Masamichi Takagi, **Paul Coffman**, Jithin Jose, Sayantan Sur, Alexander Sannikov, Sergey Oblomov, Michael Chuvelev, Masayuki Hatanaka, Xin Zhao, Paul Fischer, Thilina Rathnayake, Matt Otten, **Misun Min**, and **Pavan Balaji**

Panel:

[Common Big Data Challenges in Bio, Geo, Climate, and Social Sciences](#)

TIME: 10:30AM – 12:00PM • LOCATION: 201-203

PANELISTS: Sushil Prasad, Joel Saltz, Vipin Kumar, Chaitanya Baru, E. Lynn Usery, Daniel Reed, **Pete Beckman**, and Sangram Ganguly

Birds of a Feather:

[Analyzing Parallel I/O](#)

TIME: 12:15PM – 1:15PM • LOCATION: 402-403-404

SESSION LEADERS: **Philip Carns** and Julian Kunke

[HPC Education: Meeting of the SIGHPC Education Chapter](#)

TIME: 12:15PM – 1:15PM • LOCATION: 205-207

SESSION LEADERS: **Richard Coffey**, Fernanda Foertter, and Steve Gordon

[MPICH: A High-Performance Open-Source MPI Implementation](#)

TIME: 12:15PM – 1:15PM • LOCATION: 701

SESSION LEADERS: **Ken Raffanetti, Pavan Balaji, Abdelhalim Amer, Yanfei Guo, Neelima Bayyapu, and Kavitha Madhu**

Scientific Visualization & Data Analytics Showcase:

[Visualizing Silicene Growth Through Island Migration and Coalescence](#)

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ACM Student Research Competition:

Applying Image Feature Extraction to Cluttered Scientific Repositories

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Emily Herron, Tyler Skluzacek, **Ian Foster**, and Kyle Chard

Finding a Needle in a Field of Haystacks: Metadata Search for Distributed Research Repositories

TIME: 8:30AM – 5:00PM • LOCATION: Four Seasons Ballroom

AUTHORS: Anna Blue Keleher, Kyle Chard, **Ian Foster**, Ioan Raicu, and Alex Orhean

Friday, November 17

Workshop Papers:

Paper: High-Throughput Cancer Hypothesis Testing with an Integrated PhysiCell-EMEWS Workflow

Workshop: Computational Approaches for Cancer

TIME: 9:15AM – 9:35AM • LOCATION: 406-407

AUTHORS: **Jonathan Ozik, Nicholson Collier, Justin M. Wozniak, Charles Macal**, Chase Cockrell, Samuel H. Friedman, Ahmadreza Ghaffarizadeh, Randy Heiland, Gary An, and Paul Macklin

Paper: A Workflow Framework for Machine Learning Applied to Cancer Research

Workshop: Computational Approaches for Cancer

TIME: 9:55AM – 10:15AM • LOCATION: 406-407

AUTHORS: **Justin M. Wozniak, Rajeev Jain, Prasanna Balaprakash, Jonathan Ozik, Nicholson Collier, John Bauer, Fangfang Xia, Thomas Brettin, Rick Stevens**, Jamaludin Mohd-Yusof, Cristina, Garcia Cardona, Brian Van Essen, and Matthew Baughman

Paper: Boosting Curative Surgery Success Rates using FPGAs

Workshop: Computational Approaches for Cancer

TIME: 10:45AM – 11:05AM • LOCATION: 406-407

AUTHORS: Ahmed Sanaullah, Martin Herbordt, Chen Yang, **Yuri Alexeev**, and **Kazutomo Yoshii**

Workshops:

[H2RC: Third International Workshop on Heterogeneous Computing with Reconfigurable Logic](#)

TIME: 8:30AM – 12:00PM • LOCATION: 402-403

ORGANIZERS: Michaela Blott, Jason Bakos, Torsten Hoefler, Michael Lysaght, and **Franck Cappello**

[The 2nd International Workshop on Data Reduction for Big Scientific Data \(DRBSD-2\)](#)

TIME: 8:30AM – 12:00PM • LOCATION: 302-303

ORGANIZERS: Scott Klasky, Qing Gary Liu, Mark Ainsworth, and **Ian Foster**