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<th>Time</th>
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<tr>
<td>7:00am - 8:00am</td>
<td>Continental Breakfast</td>
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<td>8:00am - 8:05am</td>
<td>Introduction</td>
<td>Lucy Nowell, Scott Klasky</td>
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<td>8:05am - 8:20am</td>
<td>Welcome and ASCR Update</td>
<td>Barbara Helland, Director, Advanced Scientific Computing Research</td>
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<td>8:20am - 8:30am</td>
<td>Guidance for the Day</td>
<td>Lucy Nowell</td>
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<td>8:30am - 9:15am</td>
<td>Invited Talk: Exascale Computing Project (ECP) Applications’ Needs</td>
<td>Doug Kothe</td>
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<td>9:15am - 10:20am</td>
<td>Panel: Reducing the Time for Data Movement To and From Storage</td>
<td>Moderator: Lavanya Ramakrishnan</td>
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<td>● Han-Wei Shen, Extreme-Scale Distribution-Based Data Analysis</td>
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<td>● Scott Klasky, SIRIUS: Science-driven Data Management for Multi-tiered Storage</td>
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<td>● Surendra Byna (ECRP), Proactive Data Containers for Scientific Storage</td>
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<td>● Kwan-Liu Ma, Supporting Co-Design of Extreme-Scale Systems with In Situ Visual Analysis of Event-Driven Simulations</td>
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<td>10:20am - 10:50am</td>
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<td>10:50am - 11:55am</td>
<td>Panel: Exploratory Visualization Tools and Techniques</td>
<td>Moderator: Adolfy Hoisie</td>
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<td>● Wes Bethel, Towards Exascale: High Performance Visualization and Analytics</td>
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<td>● Kenneth Moreland, XVis: Visualization for the Extreme-Scale Scientific-Computation Ecosystem</td>
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<td>● Hank Childs (ECRP), Data Exploration at the Exascale</td>
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<td>● James Ahrens, Exploration of Exascale In Situ Visualization and Analysis Approaches</td>
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<td>11:55am - 1:15pm</td>
<td>Working Lunch – Invited Talk: Emerging Supercomputer Architectures</td>
<td>Katherine Riley</td>
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<td>1:15pm - 2:20pm</td>
<td>Panel: Understanding and Managing Resilience</td>
<td>Moderator: Terry Jones</td>
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<td>● Mattan Erez (ECRP), Validating Extreme-scale Resilience with Veracity</td>
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<td>● Christian Englemann (ECRP), Characterizing Faults, Errors, and Failures in Extreme-scale Systems</td>
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<td>● William Kramer, Holistic Measurement Driven Resilience</td>
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<td>● Remzi Arpaci-Dusseau, Modeling Impacts of Resilience Architectures for Extreme-Scale Storage Systems</td>
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<td>2:20pm - 3:00pm</td>
<td>Invited Talk: ECP Software Technology Update and Discussion</td>
<td>Rajeev Thakur</td>
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<td>Break and Posters</td>
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<td>4:30pm - 5:30pm</td>
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<td>● 1A: Ramakrishnan, Shen, Klasky, Byna, Ma</td>
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<td>● 1B: Hoisie, Bethel, Moreland, Childs, Ahrens</td>
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<td>● 1C: Jones, Erez, Englemann, Kramer, Arpaci-Dusseau</td>
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<td>Invited Talk: Introduction to DOE (Code ( ) Repository</td>
<td>Jay Billings</td>
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<td>Regroup and Guidance for the Day</td>
<td>Lucy Nowell,</td>
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<td>Invited Talk: Data Provenance</td>
<td>Kerstin Kleese van Dam</td>
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<td>Invited Talk: The Future of Scientific Workflows Workshop</td>
<td>Tom Peterka</td>
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<td>Panel: Scientific Workflows</td>
<td>Moderator: Galen Shipman</td>
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<td>- Lavanya Ramakrishnan, Usable Data Abstractions for Next-Generation</td>
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<td>Scientific Workflows</td>
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<td>- Patrick McCormick, A Unified Data-Driven Approach for Programming</td>
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<td>In Situ Analysis and Visualization</td>
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<td>- Tom Peterka, High Performance Decoupling of Tightly-Coupled Data</td>
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<td>- Sriram Krishnamoorthy (ECRP), Whole-program Adaptive Error Detection</td>
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<td>Working Lunch – Invited Talk: Workshop on Management,</td>
<td>Wes Bethel</td>
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<td>Analysis and Visualization of Experimental and Observational Data</td>
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<td>1:00pm - 2:05pm</td>
<td>Panel: Understanding, Optimizing, and Programming for Power</td>
<td>Moderator: Remzi Arpaci-Dusseau</td>
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<td>- David Rogers, Optimizing the Energy Usage and Cognitive Value of</td>
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<td>Extreme Scale Data Analysis Approaches</td>
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<td>- Hank Childs (ECRP), Optimizing Power Usage For Data-Intensive</td>
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<td>Workflows and Algorithms on Modern Computing Architectures</td>
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<td>- Adolfy Hoisie, Beyond the Standard Model</td>
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<td>- Rami Melhem, Lazy Shadowing - An Adaptive, Power-Aware Resiliency</td>
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<td>Panel: Modeling and Understanding</td>
<td>Moderator: Kenneth Moreland</td>
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<td>- Greg Eisenhauer, Performance Understanding and Analysis for Exascale</td>
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<td>- Kevin Barker, Evaluating Exascale Execution Models</td>
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<td>- Chris Carothers, Co-Design of Exascale Storage and</td>
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<td>- Nicholas Wright, A Framework for Holistic I/O Workload</td>
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<td>Program Management Expectations</td>
<td>Lucy Nowell</td>
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<td>Panel: Data Analysis</td>
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<td>● Surendra Byna, In situ Indexing and Query Processing</td>
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<td>● Chandrika Kamath, IDEALS: Improving Data Exploration</td>
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<td>Panel: In Situ Visualization and Infrastructure</td>
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<td>● Wes Bethel, Scalable Analysis Methods and In Situ</td>
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<td>● Florin Rusu (ECRP), Scalable and Energy-Efficient</td>
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<td>● Matthew Wolf, RSVP: Runtime System for I/O staging in</td>
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<td>Panel: Exascale Storage Challenges</td>
<td>Moderator: Greg Eisenhauer</td>
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<td>● John Wu, Scientific Data Services (SDS) – Autonomous</td>
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<td>● Rob Ross, A Software Defined Storage Approach to</td>
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<td>● Elena Pourmal, ExaHDF5: Advancing HPC I/O to Enable</td>
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<td>● Terry Jones, UNITY: Unified Memory and Storage Space</td>
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<td>Working Lunch and Breakout 3</td>
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<td>Moderators Report Back from Breakouts</td>
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<td>● 3A Engelmann, 3B Kramer, 3C Eisenhauer</td>
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<td>Wrap-up and Closing Remarks</td>
<td>Lucy Nowell</td>
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