

**The APS and HPCAT Upgrades:  
Challenges and Opportunities for High Pressure Science  
Tuesday-Wednesday-Friday, Jan, 19-20-22, 2021**

Agenda (*tentative \_ ver. 2021Jan6*)

| <b>Tuesday, Jan. 19, 2021</b>   |  |  |
|---|--|--|
| Focus on our partner and broader community future needs and vision  |  |  |
| <b>10:00am</b>  | Opening remarks and charge to workshop   | Nenad Velisavljevic, HPCAT                         |
| <b>10:20am</b>  | HPCAT current techniques and capabilities overview                                 | Maddury Somayazulu, HPCAT                          |
| <b>10:50am</b>  | Next generation experiments view from Los Alamos National Lab                      | Blake Sturtevant, LANL                             |
| <b>11:30am</b>  | Next generation experiments view from LLNL   | Will Evans, LLNL                                   |
| <b>12:10pm</b>  | Next generation experiments view from Sandia National Lab                          | Chris Seagle, SNL                                  |
| <b>12:50pm</b>  | Break for Lunch  |  |
| <b>1:30pm</b>   | CDAC's vision for next generation experiments                                      | Rus Hemley, CDAC-University of Illinois at Chicago |
| <b>2:10pm</b>   | WSU and NNSA Academic Partner representative view for next generation experiments  | Choong-Shik Yoo, Washington State U.               |
| <b>2:50pm</b>   | 10 Minute Break  |  |
| <b>3:00pm</b>   | Next generation experiments – broader user community.                              | Timothy Strobel, Carnegie Institution for Science  |
| <b>3:40pm</b>   | Next generation experiments – broader user community.                              | Thomas Duffy, Princeton U.                         |
| <b>4:20pm</b>   | Participants dismissed   |  |
| <b>4:30-5:30pm</b>  | Core workshop organizers meet to summarize day 1                                   | Nenad/Zulu/Eric/Kevin - HPCAT                      |
| <b>Wednesday, Jan. 20, 2021</b>   |  |  |
| Status from APS-Upgrade, including featured beamlines, optics, machine learning, detectors, and other opportunities |  |  |
| <b>10:00am</b>  | APS-U and featured beamlines   | Dean Haeffner (APS-U project group)                |
| <b>10:40am</b>  | Use of the coherent properties of the beam for HPCAT experiments                   | Chris Jacobsen, Northwestern U. and ANL            |
| <b>11:10am</b>  | 10 Minute Break  |  |
| <b>11:20am</b>  | Optics developments, with particular relevance to HPCAT                            | Lahsen Assoufid, APS-XSD                           |
| <b>11:50am</b>  | Detector developments, with particular relevance to HPCAT                          | Antonino Miceli, APS-XSD                           |
| <b>12:20pm</b>  | Break for Lunch  |  |
| <b>1:00pm</b>   | Optics simulations of HPCAT layout   | Xianbo Shi, APS-XSD                                |
| <b>1:30pm</b>   | Computational developments and machine learning opportunities at APS and beamlines | Mathew Cherukara, APS-XSD                          |
| <b>2:15pm</b>   | 15 Minute Break  |  |

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| <b>2:30pm</b>  | IDD – spectroscopy and inelastic around the world  | Paul / Yuming -HPCAT  |
| <b>2:50pm</b>  | Spatial and time resolved measurements with APS/HPCAT-U  | Jesse / Dean / Guoyin - HPCAT                                 |
| <b>3:10pm</b>  | High-P platforms – what we have and potential new developments, ex: d-DAC, PE press, etc.  | Ross / Guoyin - HPCAT   |
| <b>3:30pm</b>  | Imaging – possibilities with APS-U   | Changyong Park, HPCAT   |
| <b>3:45pm</b>  | Laboratory Directed Research and Development (LDRD) project at HPCAT: High pressure material characterization in 3-dimensions using X-ray diffraction-contrast computed tomography | Yue Meng, HPCAT   |
| <b>4:00pm</b>  | Participants dismissed   |   |
| <b>4:15pm</b>  | Core workshop organizers meet to summarize day 2   | Nenad/Zulu/Eric/Kevin HPCAT                                   |
|                | <b>Friday, Jan. 22, 2021</b><br>Discussion about implementation, timelines, and path ahead for HPCAT-U   |   |
| <b>10:00am</b> | Day 3 opening – what has the 1st 2 days told us about HPCAT needs  | Nenad Velisavljevic, HPCAT                                    |
| <b>10:30am</b> | Layout of existing sector  | Eric Rod, HPCAT   |
| <b>10:45am</b> | HPCAT undulator choice   | Maddury Somayazulu, HPCAT                                     |
| <b>11:00am</b> | Discussion: FOCUS on IDENTIFYING opportunities and target areas to be pursued with HPCAT-U   |   |
| <b>1:00pm</b>  | Break for Lunch  |   |
| <b>1:40pm</b>  | Timeline for the HP-CAT upgrade activities   | Kevin D’Amico, 137partners, LLC contractor with HPCAT and DCS |
| <b>1:55pm</b>  | Discussion: Prioritizing wrt timelines and feasibility   |   |
| <b>4:00pm</b>  | Participants dismissed   |   |
| <b>4:15pm</b>  | Finalize impressions from workshop; assign tasks for completion of report; Summarize part of report  | Nenad/Zulu/Eric/Kevin - HPCAT                                 |