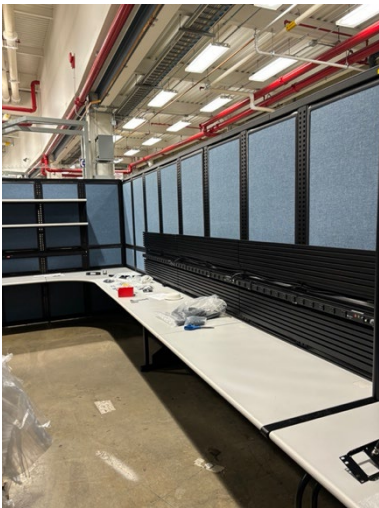


## HPCAT NEWSLETTER – APRIL 2024

### APS and HPCAT-Upgrade Status

- Please note, in our March 2024 Newsletter we provided detailed timelines regarding the upgrade and resumption timelines – posted and available online <https://hpcat.aps.anl.gov/news/2024-03/hpcat-newsletter-march-2024>
- Recent efforts and updates
  - DOE Accelerator review completed March 28. APS is on track to store current in the ring.
  - HPCAT continues with installation of various equipment across all beamlines.



A new control area of 16-ID-D-E taking shape is shown on the left while the photograph on the right shows Ross and Curt putting the laser heating system at 16-ID-B through its tests with a custom-built melting point determination set-up.



- HPCAT will host an all-hands user meeting Monday, April 29 at 1pm CDT where we will disseminate details of how the accelerator tests are going and how it impacts our startup timelines. [Join the meeting](#) on TEAMS.

### News and Highlights

#### Call for Nominations APS Users' Executive Committee

The Advanced Photon Source is seeking nominations for the APS Users' Executive Committee (APS UEC). Four members will be elected for 2024.

Submit bio and a photo using APS [Template Bio](#) as a guide.

Send submissions to Nathan Rogers ([nrogers@anl.gov](mailto:nrogers@anl.gov)). Names will be accepted until 5:00 p.m. CST, Thursday, April 25, 2024.

#### Offline user experiments at HPCAT

- During the ongoing upgrade shutdown HPCAT is available for limited offline user support. Some of the available offline capabilities include:
  - Sample lab
  - Paris-Edinburgh (PE) press experiments
  - Raman measurements
- Please reach out to Zulu [zulu@anl.gov](mailto:zulu@anl.gov) and Freda [fhumble@anl.gov](mailto:fhumble@anl.gov) for additional information and requests for onsite visits during the shutdown.

#### Outreach and user opportunities

- As part of the upcoming APS users meeting (all onsite at APS-ANL May 6-10, 2024), HPCAT staff are coordinating a number of important workshops focusing on continuing to push cutting edge research with the new APS-U beam. Final workshop list and agenda have been posted <https://www.aps.anl.gov/Users-Information/User-Community/Users-Meetings>
- Changyong Park recently participated in some exciting high P-T experiments at the EuXFEL where the research team was looking at some metastable phases of nitrogen using the intense, pulsed XFEL beam to probe and simultaneously heat the samples at MHz sampling rates. Changyong was

interested in evaluating the detectors, the sample geometries, and the data collection strategies used for these experiments and how they can augment capabilities at HPCAT post-upgrade.

- After an extensive search, we are happy to announce that Rostislav Hrubciak (Ross) will take over and spearhead the laser heating capability in 16ID-B. Ross will continue to participate in the PEC program but move his focus onto commissioning the LH table and bring it back on-line as soon as the x-ray photons from the APS-U ring are steered into 16ID-B.
- A recent publication by Dmitry Popov and collaborators from University of Michigan reported measurements on a laser deposited, additive Fe-33Cu alloy. The report published in Acta Materialia reports the high-pressure behavior of the nanoscale precipitates of the Fe-Cu alloy and reports a reversible BCC to HCP phase transition in this alloy.
- HPCAT hosted a group of high school students as a part of ANL's annual SCSW event. A team of these prospective, future women scientists were introduced to the Paris-Edinburgh program by Freda, Nenad, Tyler and Innocent.



## Job postings and various opportunities

- The [2025 APS Compression of Condensed Matter \(GCCM\) Student and Dissertation Research Award](#) will be presented to recognize outstanding work by a researcher within *two years of PhD completion*. The honor includes a \$2000 stipend. The recipient will be recognized at the March Meeting or SCCM conference and will give an invited presentation on their work. The nomination **deadline is June 3, 2024**
- Compression of Condensed Matter (GCCM) APS Fellowship. APS Fellowship recognizes outstanding achievements in research, education, and public service. Fellowship consideration is open to members of the scientific community in the US and abroad and covering all branches of high-pressure research. [Nomination Guidelines](#) can be found on the APS website. GCCM will name two APS Fellows this year. GCCM Fellow Nomination **deadline is June 3, 2024**
- Sandia National Laboratory is preparing for the *15th Z Fundamental Science with Pulsed Power: Research Opportunities and User Meeting* (tentatively scheduled for Wednesday-Friday, August 7-9, 2024). The Workshop is an opportunity for the external Z user community to discuss new collaborative research ideas, hear about the Z accelerator facility status and future plans, and discuss research directions and ideas for new work on Z. For additional information and to be included on email-distribution list reach out to Marcus Knudson, SNL staff scientist, [mdknuds@sandia.gov](mailto:mdknuds@sandia.gov)
- High Pressure Postdoc opportunities in Prof. I. I. Oleynik group at Dept. of Physics at U. of South Florida. Several PD opportunities in simulations of planetary and ICF materials - full details can be found <https://usf.box.com/s/rvvkfxl61e88nzkqiiikmkjilzfdbmyj>
- The National Nuclear Security Administration (NNSA) has published the Minority Serving Institution Partnership Program Notice of Funding Opportunity (NOFO) **DE-FOA-0003285** on [grants.gov](https://grants.gov) and [fedconnect.net](https://fedconnect.net). - due date for applications is **June 15, 2024, by 11:59 PM EST**

## Upcoming events

April 24	APS PUC/User meeting
May 1	HPCAT EC quarterly
May 2	APS User Town Hall webinar on the Universal Proposal System (UPS) 11:00am Central <a href="https://argonne.zoomgov.com/j/1607997409">https://argonne.zoomgov.com/j/1607997409</a>
May 6-10	APS User meeting, at APS-ANL <a href="https://www.aps.anl.gov/Users-Information/User-Community/Users-Meetings">https://www.aps.anl.gov/Users-Information/User-Community/Users-Meetings</a>

May 20	<a href="#">Monthly High Pressure Interest Group Meeting</a> 1pm CDT Speaker: Paul Loubeyre (CEA, DAM, DIF, France and Université Paris-Saclay, CEA, Laboratoire Matière en Conditions Extrêmes) Title: TBA
May 20-24	14th International Conference on High Energy Density Laboratory Astrophysics HEDLA-2024, Tallahassee, Florida
May 21-23	DCS/NNSA workshop on Dynamic Compression Science: Research Frontiers using High Energy X-Rays at DCS-APS <a href="https://web.cvent.com/event/57f2d020-6c88-46db-800f-671d94c91a5c/summary?locale=en-US">https://web.cvent.com/event/57f2d020-6c88-46db-800f-671d94c91a5c/summary?locale=en-US</a>
May 24	Innocent Ezenwa to present at <a href="#">ASU's Force Seminar series</a>
Deadline: June 1, 2024	Call for Neil Ashcroft Early Career Award for Studies of Matter at Extreme High Pressure Conditions from American Physical Society Topical Group on Compression of Condensed Matter (APS-GCCM) <a href="https://engage.aps.org/gccm/honors/prizes-awards">https://engage.aps.org/gccm/honors/prizes-awards</a>
Deadline: June 1, 2024	Call for George E. Duvall Shock Compression Science Award (via SCCM) <a href="https://www.aps.org/programs/honors/prizes/shock.cfm">https://www.aps.org/programs/honors/prizes/shock.cfm</a> To recognize contributions to understanding condensed matter and non-linear physics through shock compression.
Deadline: June 3, 2024	Send nominations for <a href="#">2025 APS Compression of Condensed Matter (GCCM) Student and Dissertation Research Award</a> to <a href="mailto:sduwal@sandia.gov">sduwal@sandia.gov</a>
June 23 – 28	Asia Oceania Geosciences Society (AOGS) 2024, In South Korea Pyeongchang, Gangwon-do, Korea. <a href="https://www.asiaoceania.org/aogs2024/public.asp?page=home.asp">https://www.asiaoceania.org/aogs2024/public.asp?page=home.asp</a>
July 13-14	Gordon Research Seminar - Research at High Pressure (GRS) Opportunities for High-Pressure Science Beyond Equilibrium Conditions <a href="https://www.grc.org/research-at-high-pressure-grs-conference/2024/">https://www.grc.org/research-at-high-pressure-grs-conference/2024/</a>
July 14-19	Gordon Research Conference Research at High Pressure, Holderness School, Holderness, NH, US <a href="https://www.grc.org/research-at-high-pressure-conference/2024/">https://www.grc.org/research-at-high-pressure-conference/2024/</a>
July 28 – Aug 9	The National School on Neutron and X-ray Scattering (NXS) will be held July 28 - August 9, 2024
July 31	APS PUC/User meeting
Aug 1	HPCAT EC quarterly
Aug 7-9	15th Z Fundamental Science with Pulsed Power: Research Opportunities and User Meeting is tentatively scheduled for Wednesday-Friday, August 7-9, 2024
Aug 18-23	Goldschmidt2024 Conference in Chicago, IL <a href="https://conf.goldschmidt.info/goldschmidt/2024/goldschmidt/2024/meetingapp.cgi">https://conf.goldschmidt.info/goldschmidt/2024/goldschmidt/2024/meetingapp.cgi</a>
Oct 23	APS PUC/User meeting
Oct 30	HPCAT EC quarterly