

SERCAT-BCSB Collaboration During SER-CAT/APS Upgrade

Bi-Cheng Wang¹, Marc Allaire², John Rose³, John Chrzas⁴, Zheng-qing "Albert" Fu⁵

¹University of Georgia ²No affiliation given, ³SER-CAT/University of Georgia, ⁴SER-CAT/University of Georgia, ⁵SER-CAT/University of Georgia

bcwang@uga.edu

The SouthEast Regional Collaborative Access Team (SER-CAT, <https://www2.ser.aps.anl.gov>) is a consortium formed to provide 3rd generation x-ray capabilities at the Advanced Photon Source (APS) to structural biologists of its membership institutions and the general user community. SER-CAT, operated by the University of Georgia, currently has 23 participating institutions located across the East Coast, the South and the Midwest regions of the United States. The APS synchrotron storage ring is scheduled to begin its \$815M upgrade in April 2023 to provide the state-of-the-art 4th generation X-ray capabilities. Once fully commissioned, the new storage ring will boost the brightness of the X-ray source by up to 500 times and the beam size in the horizontal plane will be significantly reduced (<https://www.aps.anl.gov/APS-Upgrade>).

The first year of the APS construction period is referred to as the "dark" period in which no X-rays are available for experimentation at the APS. Because of this, a collaboration with Berkeley Center for Structural Biology (BCSB), Advanced Light Source (AKS) was formed to provide SER-CAT consortium members pre-scheduled beam time at the ALS for their research and to avoid serious interruption to their program. Although the "dark" period is still two years away, the SERCAT-BCSB collaboration is already in full swing, beginning with a virtual workshop and demonstration in March 2021, followed by hands-on remote data collection practice using the BCSB beamlines from individual user groups in May and June 2021. In addition to the expected one-year APS dark period, SER-CAT will also use the BCSB beam time for SER-CAT users during the regular APS maintenance periods to provide members with "Light When You Need It" echoing SER-CAT's goal that has been inscribed on the SER-CAT logo since 1999. Plans for the collaboration will be shared with the community during the 2021 ACA meeting.