Advances in synchrotron sources, optics, and detectors have enabled and will continue to spark new approaches and applications in advanced x-ray spectroscopy and microscopy. X-ray spectroscopies are powerful, element specific probes of composition, spatial distribution, and local electronic structure in complex materials. For example x-ray emission spectroscopy has been used to monitor the spin of metal active sites such as Mn in the oxygen evolving complex (OEC) in PSII. This dual-session workshop will explore opportunities in each of these areas at CHESS enabled by upgrade to single beam operation with undulator sources.

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