Goldschmidt 2024 Abstract
https://doi.org/10.46247/gold2024.24557

SEES : New Opportunities and Developments in Synchrotron Earth and Environmental Science

ANDREW J. CAMPBELL

The University of Chicago

Presenting Author: campbell@geosci.uchicago.edu

SEES (Synchrotron Earth and Environmental Science) is a new organization to manage NSF support for synchrotron beamlines that focus on geoscience user applications. SEES includes GSECARS and the former COMPRES-supported beamlines, and facilitates new beamline access for applications in low-temperature geochemistry, environmental science, and in-situ studies of rock deformation at the ALS, NSLS-II, APS, and SSRL synchrotrons. Among these newly supported capabilities are STXM and ptychography at soft X-ray beamlines at ALS; this investment will enhance access to these techniques for environmental science and other geological studies. SEES is also investing support for imaging X-ray spectroscopy and X-ray microprobe applications at NSLS-II. Coordinated management across all of these beamline facilities will improve service to the user community and enhance development across the existing X-ray and IR beamlines. The ongoing upgrade of the APS synchrotron source will greatly enhance the brightness and spatial resolution available to a wide variety of X-ray techniques, and SEES is supporting beamline developments to exploit these upgraded capabilities for geoscience applications. Additionally, SEES is positioned to take advantage of the planned 2026 upgrade at ALS for continued support of enhanced soft X-ray applications in geochemistry and environmental science, and will expand user access for rock deformation studies at ALS and APS.