☐ **Talk** ☒ **Poster**

Integrated Bioimaging for Biological and Environmental Research

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Understanding the structure, composition, and chemical state of complex biological and environmental systems requires a comprehensive approach that can capture information across length scales and techniques.

The Bioimaging Core (BIC) at the National Synchrotron Light Source II (NSLS-II) provides researchers with access to an integrated suite of complementary techniques, including X-ray Fluorescence Microscopy (XFM), X-ray Absorption Spectroscopy (XAS), X-ray Diffraction (XRD), X-ray Scattering (XRS), Fourier Transform Infrared Imaging (FTIR-I), and complementary laboratory tools.

These advanced capabilities enable researchers to visualize the structure, chemical makeup and speciation *in situ* in biological samples, at interfaces between other organisms or between an organism and its environment at micron to nanoscales.

By combining these capabilities, the BIC empowers scientists to address questions ranging from trace metal localization in plant–microbe–soil systems to the structural and chemical drivers of nutrient mobility in the environment. Through proposal support, hands-on training, beamline access and expert guidance, the program ensures users can design effective experiments, prepare high quality samples, and interpret datasets with confidence. This integrated approach accelerates discoveries and expands the possibilities for biological and environmental research at the molecular to macroscopic scale.