

## Poster #UF-5

### Research in Biogeochemical Sciences at the Berkeley Synchrotron Infrared Structural Biology (BSISB) Imaging Program

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Project Website: <https://bsisb.lbl.gov/wordpress/>

The BSISB program is the only DOE/BER-funded imaging resource facility centered around special beamlines that use non-invasive but bright infrared beams to study live microorganisms and cells in terrestrial ecosystems. Since 2010, the BSISB has been developing user-driven cutting-edge infrared imaging technologies that enable researchers to acquire with chemical resolution fundamental knowledge about the nature and behavior of living microbes, microbial communities, microbe-host, and microbe-environment interactions. More than 95% of the BSISB budget goes to our Beginning-to-End (B2E) user process, which starts when a user initiates communication, safety, hands-on training, and ends when the data analysis and interpretation are completed. Throughout the B2E process, the BSISB staff communicate with the user teams to design their experiments, and to help with data analysis and interpretation if needed. The information captured is used to improve BSISB technological capabilities and align them with user needs. Here, we highlight our current capabilities and present examples of using synchrotron radiation-based Fourier Transform Infrared (SR-FTIR or sFTIR) spectral imaging techniques to study biogeochemical systems.