☒ **Talk** ☒ **Poster**

SOILARIUM: a collaboration between EMSL's Molecular Observation Network (MONet) and APS' eBERlight

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EMSL is leading the effort to develop a national network of environmental sampling and sensing sites to produce comprehensive molecular-level information on the composition and structure of soil, water, and resident microbial communities required to advance the span and accuracy of multiscale models of Earth systems. Through the Molecular Observation Network (MONet), EMSL collaborates with a broad range of partners managing an expanding network of selected natural, urban, and managed watershed, coastal, continental, and atmospheric sites. Standardized soil molecular and microscale data – at regional and larger scales – are collected to improve biogeochemical process representations in such Earth System models. Advanced molecular and microscale data produced from analyses of soil cores sent in by MONet users is made available in a searchable open database. This database allows for the conversion of traditional labor-intensive molecular analysis methods into a high-throughput workflow, providing key molecular and microscale information to scientists, both modelers and experimenters. Premier analytical methods at EMSL, the Joint Genome Institute, and the Advanced Photon Source are used to generate the above data. In this presentation, the MONet will be introduced and ongoing efforts to develop SOILARIUM (SOILs @ APS RIng for Users of MONet), an eBERlight-MONet collaboration to generate critical soil Fe chemistry and high-resolution pore network data will be discussed.