Daniel Knopf, Stony Brook University

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Dr. Knopf's research expertise comprises several aspects of atmospheric aerosol such as the role of the biosphere in aerosol formation, in particular the role of marine biological activity on sea spray aerosol, the phase transition of aerosol particles, in particular their ability to induce ice nucleation, and the physical and chemical transformation of aerosol particles by multiphase reactions involving gas phase oxidants and radicals. He uses field-collected particles for laboratory studies of atmospheric chemistry and physics using novel instruments developed in his group: ice nucleation cells that mimic atmospheric conditions as low as 180 K and chemical ionization mass spectrometer to detect in situ OH and NO3 radicals. To understand the chemical and physical particle properties that govern the underlying processes on a fundamental level, i.e. on a molecular or at the interfacial scale, his group makes ample use of the micro-spectroscopic analytical instrumentation hosted by EMSL. Knopf has been an active EMSL user and collaborator since 2008 and has served as peer reviewer for EMSL's proposal process. Many of his projects extended beyond EMSL, and included collaboration with scientists from other DOE facilities such as the Advanced Light Source at LBNL, as well as G-1 research aircraft and ARM program at PNNL. Knopf strongly supports the objectives of the UEC to provide a means for direct exchange of information and advice between EMSL users and management. Knopf believes that it is important for users to know there are "open ears" and hopes to share his user experience and expertise with current and future users and to identify ways to further improve these research opportunities and advance EMSL's mission.