CZIAME: Critical Zone Integrative Activity for Microbial Ecology

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The Critical Zone is defined as the three-dimensional region of the biosphere from the highest treetops to the lowest groundwater—in other words, the zone of greatest heterogeneity. Our project has launched a cross-disciplinary research activity involving many universities affiliated with the 10 Critical Zone Observatories spread across the country. The scientific goal of this project is to gain insights into the differences between soil microbial communities as they vary across ecosystems, and with depth within a given soil profile. To that end, we are using a wide range of soil and environmental methods, as well as both metagenomic and amplicon high throughput sequencing, to analyze nearly 200 unique soil samples. In order to assemble and share this huge and diverse dataset, we are working with EarthCube and related projects to make the data accessible across the Critical Zone network, as well as being available to the broader community. We are developing procedural and datastream workflows to enable these capabilities, and are interested in building our capacity with relevant EarthCube tools. We here present the project and its current datasets and workflows.