

The intriguing world beneath our feet: Linking structure and function, organisms and processes.

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What habitat is the most diverse on earth, and yet we know little about it? Who do we rely on to recycle nutrients, produce and consume gases that affect global climate, destroy pollutants, treat wastes and without whom life on earth would cease? The answer is nothing that you can easily see with the naked eye. The answer lies beneath your feet. The soil is teeming with microscopic life, most of which is undescribed, but which is vital for our survival. Soils contain an immense diversity of organisms, many of which we have little knowledge. The paucity of information regarding belowground diversity, in particular microbial community structure and function is because the techniques to study these organisms have only recently been developed. Such methods include biochemical and molecular analyses of phylogenetic and functional genes as well as stable isotope labeling and probing to determine links between soil processes and soil organisms. In this presentation I will discuss current research at UBC using such methods to assess patterns of microbial community structure and function across BC's forests and to unravel the roles of different microorganisms in nitrogen and phosphorus cycling and greenhouse gas emissions.