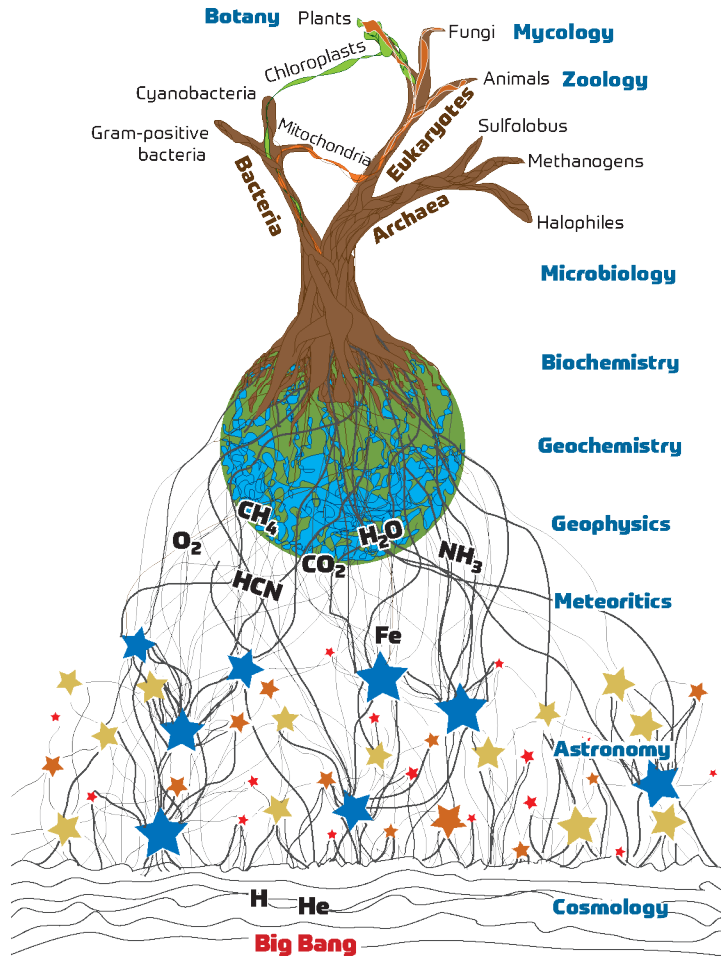


A habitable world. Starting at the Big Bang, a cascade of physical and biogeochemical processes led to Earth becoming a habitable planet and enabled the emergence of life—with the tree of life taking root approximately 4 billion years ago. Biologists have reconstructed the terrestrial phylogenetic tree of life based on the molecular fossils inside the DNA of living cells. Scientific ocean drilling provides access to subseafloor environments and biosphere communities to investigate the conditions and processes that were required to develop and maintain a habitable world and understand how it evolved. *Modified from Lineweaver and Chopra (2012), <https://doi.org/10.1146/annurev-earth-042711-105531>*



**Scientific Ocean Drilling**  
 investigations span the multidisciplinary processes that led to the establishment of Earth's biosphere/ tree of life.