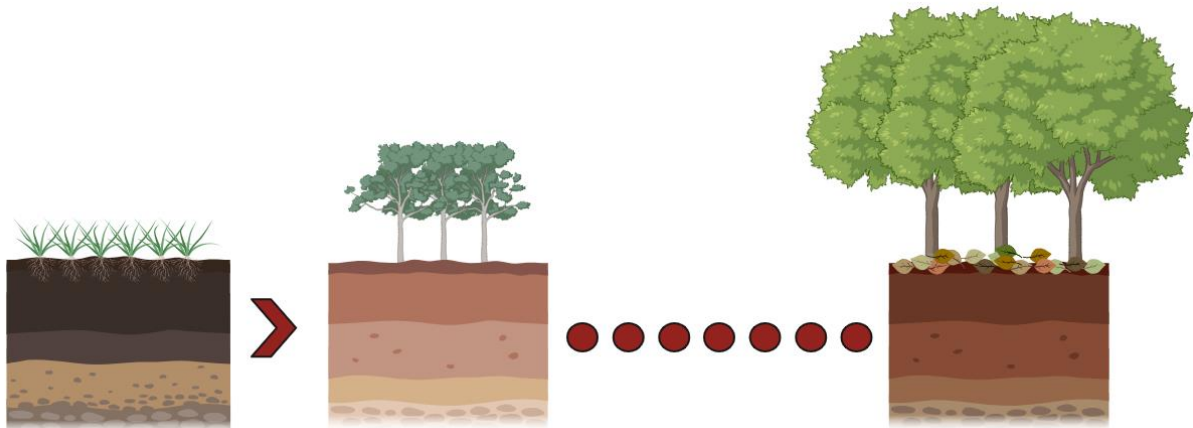


Afforesting with microbes:

Understanding the microbial effects on *Frankia alni* nodulation in black alder (*Alnus glutinosa*)

Throughout the course of afforestation, biotic and abiotic soil factors shift as degraded land matures into a beautiful forest. Pioneer tree species like the common black alder (*A. glutinosa*) are used in afforestation as they are known for their adaptability to a large range of ecosystems.



These trees not only ameliorate soil structure through leaf and root exudates but they also form both endo and ectomycorrhizal symbiosis which improves their capacity to extract macronutrients. They also form bacterial symbiosis with bacteria of the genus *Frankia*. They form a symbiotic relationship with the roots of Alder trees and through their association they can supply 70-90% of the nitrogen needed by the host plant and also enrich the soil with nitrogen. While studies have highlighted how abiotic soil effects can influence the symbiotic success of this very important bacterium, little is known about how microbial soil communities can affect it and whether this varies depending on forest soil age.



In our lab we conduct many experiments to explore the mechanisms behind this symbiotic phenomenon. Are you an active thinker with bright ideas? Are you interested in exploring tree-microbe interactions? Then consider applying for an internship with us! Have a look at our website for more info on our research.

Your supervisor: Kostas Georgopoulos (PhD candidate)



Starting date: ~Summer 2024

Topic: We plan a topic around the theme. Creative ideas are welcome!

Contact: k.georgopoulos@biology.leidenuniv.nl

Web-site: <https://www.above-belowgroundinteractions.com/>

