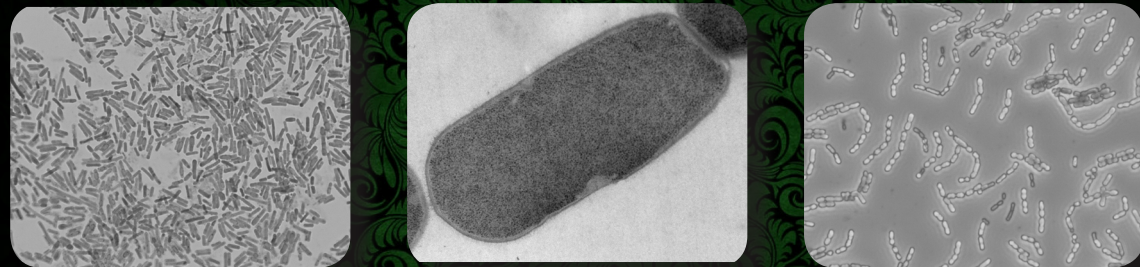


THE GENUS *ROMBOUTSIA* - GENOMIC AND FUNCTIONAL CHARACTERIZATION

JACOLINE GERRITSEN



THE GENUS *ROMBOUTSIA*

GENOMIC AND FUNCTIONAL CHARACTERIZATION OF NOVEL
BACTERIA DEDICATED TO LIFE IN THE INTESTINAL TRACT

JACOLINE GERRITSEN

The Bonsai

For hundreds of years the image of a tree has been used as a visual representation of (evolutionary) relationships among organisms ('The Tree of Life'). The leaves of the tree represent individual species, while the splitting branches represent divergence events. Also relationships among bacterial species are often visualized in tree-shaped diagrams.

It is not just a tree that decorates the cover of this thesis, it is a bonsai. The Japanese word 'bonsai' is used to describe a tree which is planted in a shallow container. The bonsai metaphorically depicts the bacterial tree of life, since a number of techniques used for the care of bonsai are similar to those applied in bacterial classification. Selective removal of parts of a tree, known as pruning, is performed to maintain and refine the shape of the tree. In addition, pruning of leaves (species) is sometimes needed to restrain excessive growth. Furthermore, branches are wired to bend and reposition them into the desired shape. This is similar to the creation of higher-level groups in the bacterial tree of life to support the formation of small branches and new leaves on specific locations in the tree. Grafting, the placement of new growing material into a prepared area on the trunk, resembles the reclassification of bacterial taxa. Deciding which branches or leaves should stay or be removed can be challenging since there are no rules but only guidelines to support decision making, as is also the case for the classification of bacteria. So in the end, the shape of the tree is strongly dependent on choices that have been made by the artist/scientist in the creative process.

