**PhD:** Food Science

**Title: Impact of a plant-based diet on the gut microbiome**

**Proposing supervisor: Prof. Danilo Ercolini**

**Co-supervisors: Andrea Bulelli – Kraft-Heinz**

**Objectives of the research project and interdisciplinary collaborations** (max 1000 characters):

The project aims to evaluate the impact of a diet with plant-based foods on the microbiota of healthy individuals. In particular, we want to evaluate how the replacement of protein sources of animal origin with sources of vegetable origin (legumes) is capable of modulating the intestinal microbiota and, possibly, some indicators of the inflammatory state and in general of the immune system of healthy individuals. The functionalization of food matrices through fermentation aimed at the production of postbiotics with biological activity is also envisaged.

The intestinal microbiome represents the key to objectively assess the impact of diet on the health of individuals.

**Innovation and originality of the project in relation to the state of the art** (max 1000 characters):

The greater consumption of plant-based proteins together with the decrease in foods of animal origin will represent one of the major transformations, already underway, in the consumption habits of the world population and a primary interest of the food company. A new generation of foods is introducing itself to the market (vegetable milks, vegetable burgers, legume-based flours, etc). In addition to undoubted benefits related to aspects of sustainability and a greater balance of the diet, demonstrating the impact on the microbiome and in general on the immune system will innovate the sector by adding value and differentiation to the new food and dietary proposals. Companies and consumers are increasingly sensitive to nutritional aspects and in particular to the proper functioning of the immune system supported by proper nutrition.

**Grant availability** (funds to support the research activities):

Economies and grants from companies interested in the project.

**Collaborations with foreign institutions** (max 500 characters):

KraftHeinz Company innovation centers of Naples, Nijmegen and Chicago

Universities of Wageningen and Illinois