



Diana OLIVEIRA

Institution: School of Food & Nutritional Sciences, University College Cork

Academic Mentor: Dr Seamus O'Mahony

Commercial Partner: Carbery Group Ltd

Commercial Mentor: Pat Mulcahy

Diana's three-year project explores a specific lipid-protein-enriched by-product with techno-functional properties both for nutritional and technological applications. She has been a postdoctoral researcher at UCC working on a joint-project with the Dairy Processing Technology Centre (DPTC); and before that, a researcher at the Food for Health Science Centre of Lund University in Sweden for two years.

After graduating in Portugal with an MSC in Food Science and Human Nutrition, Diana worked for four years as a food technologist before attending the University of Reading, in the UK, where she carried out a four-year PhD project entitled, 'Separation and Prebiotic Evaluation of Oligosaccharides from Caprine Whey'.

Diana has a track-record of international collaboration with industry partners, contributing to multidisciplinary projects in a number of European countries. Her current research interests within the food science and technology field are focused on bioactive compounds, functional ingredients and valorisation of by-products.

See case study overleaf

Dr Seamus O'Mahony

Dr. Seamus O'Mahony is based at the school of Food & Nutritional Sciences at UCC and leads the Food Ingredients Research Group. Seamus is an experienced infant formula industry professional with a large research group in the area of dairy ingredients. Due to the strong application focus (eg infant nutrition product formulation and processing) of his research programme he has collaborated with many industry partners, universities and research centres, domestically and internationally. He is also principal investigator and Pillar leader for DPTC.

Pat Mulcahy

Pat Mulcahy is Ingredient Development Manager at Carbery with extensive experience in whey protein development, including, processing, fractionation and hydrolysis. He has been closely involved in many research collaborations – for example, University College Cork and Teagasc – helping Carbery's development as a nutritional high-valued-added dairy company. He is currently an Industry Mentor at the Dairy Processing Technology Centre at the University of Limerick.

School of Food & Nutritional Sciences, University College Cork

University College Cork has a significant track record in dairy research, building on almost a century of internationally recognised teaching and research. While it's core programme is dairy processing, it is involved in all areas of food science and technology.

Carbery Group Ltd

Carbery is a leading manufacturer of specialty and nutritional dairy ingredients, flavours and cheeses. The company has brought innovative and high-quality foods and ingredients to market for over 50 years. It is a founding partner of Food for Health Ireland, which seeks to harness world-class science and industry expertise to improve health.

Diana's project

The demand for foods with benefits beyond their intrinsic nutritional properties, is growing, leading to increased research in food matrices that can deliver both biological and techno-functional properties.

Moreover, valorising low-value side-streams, creating value-added products with functional properties – either for human-health promotion or as technological enhancers, aiding industrial sustainability – is an international goal.

In this context, this project idea originated from the need to find alternative and more economical sources for ingredients enriched with milk phospholipid (PL); while also creating sustainable and industrially-viable processes to minimise the waste created by the dairy industry.

Whey protein isolate (WPI) manufacture generates a significant amount of a whey protein-based by-product, rich in milk fat globule membrane (MFGM)-derived material, namely PLs and specific membrane proteins. Both are recognised to have functional properties, with potential nutritional and technological applications.

Therefore, this project aims to exploit this alternative source of these whey based MFGM-components and to better understand their individual and combined nutritional and techno-functional effects, while generating a new dairy ingredient category with commercial potential.
