# Dr. Maria Pia FRANCESCATO

# Curriculum Vitae

**General information**
Born in Artegna (UD, Italy) on December 16, 1958
Nationality: Italian
Marital Status: Widower
Two daughters

**Main Education**

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| **1984 – 1987** | Specialization in Food Sciences attained at the University of Pavia (Italy)<br>Degree Mark: 50/50 cum laude |
| **1977 - 1983** | Bachelor's Degree in Medicine attained at the University of Trieste (Italy). Title of the thesis: "Studio sulle caratteristiche dell'alimentazione libera di giovani soggetti diabetici" (Study on the characteristics of the free eating habits of young people with diabetes), supervisor prof. B. de Bernard<br><br>Degree mark: 110/110 cum laude |

**Main work experiences**

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| **July 1990 – today** | Experienced Researcher in Physiology (Italian Scientific Insolvency BIO/09) at the Department of Medical and Biological Sciences, University of Udine |
| **May 2018 – July 2018** | Visiting professor at the Institut für Physiologie und Anatomie of the Deutsche SporthochSchule – Köln (Germany) for a project in collaboration with dott. Uwe Hoffmann |
| **April 1987 – June 1990** | Research fellow at the Department of Biochemistry, Biophysics and Chemistry of Macromolecules, University of Trieste |

**Research interests**
For the Medical degree, I studied nutritional issues, implementing a software for the analysis of individual dietary habits that has been applied to study different cohorts of subjects (e.g. children with type 1 diabetes, pregnant women).
Since 1990, I focused my interests on the energy cost of sport activities and of walking in locomotor disabled people. I also studied the muscular energy balance at exercise onset by means of $^{31}$P Nuclear Magnetic Resonance, with the aim of determining the $P/O_2$ ratio in vivo in humans.
More recently, my major interest was devoted to the exercise metabolism in patients with type 1 diabetes, in particular as concerns the prevention of exercise-related glycaemic imbalances. In collaboration with the University of Trieste, an algorithm has been developed to estimate, on a patient- and situation specific basis, the carbohydrate requirement to avoid an excessive fall of glycaemia during exercise. Currently, the algorithm has been implemented as an app for

smartphone, which could be the basis for liberating patients of the fear of exercise-induced hypoglycaemia, allowing them to enjoy all the benefits of a regular physical activity. European and US patent have been granted for the algorithm and I received several awards linked to this research project.

In the last years, I was involved in designing and testing a new algorithm for the calculation of breath-by-breath gas exchange, starting from the respiratory flow and from the traces of inspired and expired gas fractions. Main characteristic is that the new algorithm should be able to take into account the changes in the lung gas stores, thus providing the gas exchange at alveolar level. The new algorithm has shown a very nice performance, since it seems able to reduce by about 30% the noise in the oxygen uptake data assessed breath-by-breath either in steady-state conditions and during the transients.