

Minibio

Susanna Terracini is an Italian mathematician whose research lies at the interface of the calculus of variations, nonlinear partial differential equations, and dynamical systems. Her research has developed along several interconnected directions, including variational methods in celestial mechanics, nonlinear partial differential equations, phase separation, and free boundary problems. More broadly, her work is concerned with the mathematical analysis of complex nonlinear phenomena, ranging from gravitational dynamics to pattern formation and strongly competing systems.

She received her degree in Mathematics from the University of Turin in 1986 and obtained her PhD from SISSA (International School for Advanced Studies) in 1990, following a period of research with Ivar Ekeland in Paris. She subsequently held research and faculty positions at the Polytechnic University of Milan. In 2001 she became Full Professor at the University of Milano-Bicocca, and in 2012 she joined the University of Turin, where she is currently Full Professor of Mathematical Analysis.

Her research has introduced new variational and analytical approaches to the study of singularities, symmetry, asymptotic behaviour, and pattern formation in nonlinear systems. Her contributions include the variational theory of collision-free and periodic solutions for the Newtonian N -body problem, the mathematical analysis of competition–diffusion systems and nonlinear Schrödinger equations, and the study of free boundary problems and singular perturbation phenomena. These works have contributed to strengthening the connections between the calculus of variations, geometric analysis, nonlinear partial differential equations, and mathematical physics.

Her work has been recognised by the Vinti Prize of the Italian Mathematical Union (2002), the Bruno Finzi Prize of the Istituto Lombardo, Accademia di Scienze e Lettere (2007), an ERC Advanced Grant for the project *COMPAT – Complex Patterns in Strongly Interacting Dynamical Systems* (2013–2019), and the Juliusz Schauder Medal (2021).

From 2013 to 2015 she served as President of European Women in Mathematics. She is a member of the Istituto Lombardo, Accademia di Scienze e Lettere, and of the Royal Academy of Belgium (Académie royale de Belgique).

She has authored or co-authored about 145 research papers, advised or co-advised 25 Phd students and mentored more than 20 post-docs.