

Short Curriculum ELVIRA MASCOLO

Education

Degree in Mathematics (Laurea) obtained in June 1976 at the Faculty of Mathematical, Physical and Natural Sciences, University of Naples, with full marks *110/110 cum laude*.

Academic Positions

- C.N.R. Research Fellow (1977) at the Faculty of Mathematical, Physical and Natural Sciences, University of Salerno.
- *Professore Incaricato* (Adjunct Professor), University of Calabria (1979–1980).
- Tenured Researcher and subsequently Associate Professor, Faculty of Mathematical, Physical and Natural Sciences, University of Salerno (1980–1985).
- Associate Professor (1988–2001) and Full Professor (since 2001) of Mathematical Analysis (MAT/05) at the Department of Mathematics and Computer Science “Ulisse Dini”, University of Florence.

Teaching Activity

- University of Calabria: Theory of Functions (1979–1981).
- University of Salerno: Mathematical Analysis (1981–1988), degree programmes in Computer Science and Mathematics.
- University of Florence:
 - Mathematical Analysis (1988–2004), degree programme in Physics;
 - Mathematical Analysis (2004–2018), degree programme in Biological Sciences;
 - Calculus of Variations (1994–2004) and Functional Analysis (2004–2023), degree programme in Mathematics.

Supervisor of undergraduate and PhD theses.

Research Interests

Author of about 70 scientific publications on topics in Partial Differential Equations and the Calculus of Variations. In particular, her research concerns:

- Existence of solutions for non-convex variational functionals;
- Regularity issues for equations and systems of partial differential equations, with special emphasis on problems with p - q growth conditions, anisotropic and general growth;
- Regularity of vectorial minimizers of polyconvex functionals;
- Semicontinuity problems for polyconvex and quasiconvex functionals.

Scientific Collaborations and Visiting Courses at Foreign Institutions

School of Mathematics, University of Minnesota, Minneapolis (USA)
Universidad Nacional de Tucumán, Faculty of Exact Sciences and Technology (Argentina)
Universidad Austral, Rosario (Argentina)
Faculty of Engineering, Universidad de Lima (Peru)
Faculty of Sciences, Universidad de San Luis (Argentina)
IMA – Instituto Matemático Argentino (CONICET), Buenos Aires (Argentina)

Organizational Activities

- Vice-Dean of the Faculty of Mathematical, Physical and Natural Sciences, University of Florence (November 2010 – March 2013).
- Deputy Director of DIMAI – Department of Mathematics and Computer Science, University of Florence (November 2017 – 2020).
- Scientific Secretary of the CIME Foundation – *Centro Internazionale Matematico Estivo* (2002–2014) and Director of the CIME Foundation (2015–2022).
CIME is a non-profit scientific foundation established in 1954 and based at the DIMAI “U. Dini” of the University of Florence.
Over 70 years of uninterrupted activity, the CIME Foundation has organized over 220 courses covering all areas of mathematics, both theoretical and applied, with the participation of more than 16,500 researchers and students from all over the world.
- Editor of the *Lecture Notes in Mathematics*, CIME Foundation Subseries.
- Scientific Coordinator of the grant awarded, pursuant to Law 401/1990, by the Directorate General for Cultural Promotion and Cooperation of the Italian Ministry of Foreign Affairs, for the years 2002 and 2003, aimed at developing scientific and technological relations with the Argentine Republic.
- Principal Investigator (2002–2003) of the bilateral project on Scientific and Technological Collaboration and Advanced Training under the Italy–Argentina bilateral agreement, entitled *Mathematical Models, Elliptic and Parabolic Equations*.

Projects for teaching support and popularizing mathematics

- Collaboration with the *Giardino di Archimede – Un museo per la Matematica* and with the Teatro e Scienza Project, aimed at upper secondary school students, in cooperation with the Teatro di Rifredi in Florence.
- Member of the Steering Committee of *OpenLab* (2002–2011), a training structure of the Faculty of Mathematical, Physical and Natural Sciences of the University of Florence, with the aim of organizing and promoting activities for the dissemination and popularization of scientific culture.

Participation in and Organization of Conferences

Participation in numerous national and international conferences and schools, presenting several publications both orally and in written form (proceedings).
Organizer of many national and international conferences.