

CURRICULUM VITAE

LUIGI PREZIOSI

PERSONAL DETAILS

Date of birth: Naples, October 2nd, 1961.
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HIGHER EDUCATION

- Master degree in Mathematics cum laude at the University of Naples (July 24th, 1984)
- Ph.D. in Mechanics with minor in Mathematics at the University of Minnesota (Dec 31th, 1986)
- Ph. D. in Mathematics at the University of Naples (Oct 31th, 1989)

ACADEMIC HISTORY

- 2000 to now: Full professor at the Politecnico di Torino
- 1993 to 2000: Associate professor at the Politecnico di Torino
- 1992 to 1993: Associate professor at the Università della Calabria
- 1989 to 1992: Researcher at the Politecnico di Torino
- 1984 to 1986: Research/Teaching Assistant at the University of Minnesota

RESEARCH ACTIVITY

Essentially devoted to the different aspects of mathematical modelling, from the formulation of models, to their analytic study, simulation and validation, in particular on the following topics

- Tumour growth
- Tissue mechanics
- Vascular networks
- Cell-environment interactions
- Cell migration
- Multiscale aspects in individual based models
- Soil, sand, and avalanche mechanics
- Flow and stability of immiscible liquids
- Flow and stability of non-Newtonian fluids
- Hyperbolic models in heat conduction
- Kinetic models in gas-dynamics
- Composite material manufacturing processes

PUBLICATIONS

- 5 books and 5 edited books;
- 40 book chapters;
- More than 150 articles in peer-reviewed journals, with h-index=36 on Scopus, summing up to more than 6000 citations;
- The paper on “Heat waves” received more than 1400 citations and its addendum more than 500 citations. Other 11 papers have already received more than 100 citations.

MAJOR RESEARCH ACHIEVEMENTS

- Identified an efficient method to transport very viscous fluids in pipes with its workability window;
- First to model several composite material manufacturing processes;
- Introduced the use of the theory of mixture and then the theory of evolving natural configuration to describe tumour growth;
- Identified and modelled the mechanism of formation of vascular networks in embryogenesis;
- Identified criteria for cell segregation by the surrounding fibrous environment;
- Introduced a modification of cellular Potts models to include the presence of sub-cellular elements such as cell nucleus and membrane.

PATENTS

- Spinning rod tensiometer, an instrument to measure the interfacial tension between immiscible liquids, (U. S. Patent 4644782 e 5150607).
- Deflecting module for an anti-sand barrier, a barrier thus obtained and a protection method from windblown sand (PCT/IT2015/000129)

MAIN ACADEMIC ACTIVITIES

- Member of the Accademia dei Lincei since July 2016 (socio corrispondente).
- Member of the board of the PNR (National Research Project, Section Health) in 2019
- Member of the VQR (Valutazione della Qualità della Ricerca) National Committee for the period 2013-2016
- 2007-2018: President of the School of Engineering Mathematics from 2007 to 2018 and vice-president from 2018

Member of the Scientific Boards of the following societies:

- European Society for Mathematical and Theoretical Biology (ESMTB) from 2002 to 2008.
- Centro Interuniversitario di Matematica Applicata alla Biologia (CIMAB) since 2006 (President since 2010)
- Gruppo Nazionale di Fisica Matematica from 2008 to 2012
- Coordinator of the Activity Group of the Italian Society of Industrial and Applied Mathematics (SIMAI) on Life and Environmental Sciences since 2009

Member of the Advisory Editorial Board of the book series:

- Lecture Notes in Mathematical Modelling in the Life Sciences (Springer)

Associate editor of the international journals:

- Journal of Theoretical Biology
- Mathematical Medicine and Biology: A Journal of the IMA
- Networks and Heterogeneous Media
- Mathematics in Engineering
- PLOS One
- EPJ Nonlinear Biomedical Physics
- Applied Mathematics and Computation

SUPERVISION OF GRADUATE STUDENTS

Tutor of more than 80 master students in the last ten years.

Supervisor of 16 Ph.D. students. Among them

- Three are now associate professors at the Politecnico di Torino and the University of Florence.
- Five are researchers at the Politecnico di Torino,
- One is post-doc at the Politecnico di Torino
- Three are working in industry

(still supervising four students).