

ALBERTO BOFFI – BIOSKETCH

Full Professor of Molecular Biology, Sapienza University of Rome

Spoke Leader, CN3 Spoke 2 “Cancer”

Alberto Boffi is Full Professor of Molecular Biology at Sapienza University of Rome. He graduated cum laude in Medicine at Sapienza in 1985 and subsequently developed his scientific career at the interface between molecular biology, biochemistry, structural biology, biophysics and biotechnology. After research experience in France, he joined the Italian National Research Council (CNR), where he worked from 1991 to 2000, before being appointed Full Professor at Sapienza in 2000.

His early research focused on structure-function relationships in globins, hemoproteins and redox enzymes, including advanced spectroscopic approaches developed through long-standing collaborations with the Albert Einstein College of Medicine and AT&T Bell Laboratories in the United States. His research subsequently expanded toward biotechnology, nanomedicine and targeted drug delivery, with particular emphasis on engineered ferritin nanocages for the selective delivery of drugs, proteins and nucleic acids to cancer cells.

He has coordinated numerous national and interdisciplinary research programs and is currently Spoke Leader of Spoke 2 “Cancer” of the PNRR National Center for Gene Therapy and Drugs based on RNA Technology (CN3). Spoke 2 brings together a large national network of universities, CNR institutes and industrial partners to develop RNA-based biomarkers, therapeutics, cancer vaccines and advanced delivery technologies, connecting molecular discovery with preclinical and translational development.

At Sapienza, he has contributed to the establishment of the RNA Formulation Lab, the CN3 Spoke 2 Facility dedicated to RNA formulation, characterization and delivery. The facility is designed as a shared infrastructure connecting basic RNA research with preclinical development and technology transfer and is intended to provide access and services to academic institutions, research organizations and industrial partners.

Technology transfer represents a major component of his scientific activity. His research has generated several patents and contributed to the creation of biotechnology companies and academic spin-offs. He has been founder or co-founder of MoLiRom, Biogamma, Cellis, Thena Biotech and Cellis AG, and has promoted joint laboratories between academia and industry. These activities include the translation of ferritin-based drug-delivery technologies toward advanced anticancer applications.

He served as Director of the Department of Biochemical Sciences at Sapienza from 2015 to 2021 and has held several institutional roles related to research, innovation and interaction with industry. His scientific production comprises more than 160 peer-reviewed publications spanning molecular and structural biology, biophysics, nanotechnology, drug delivery and biotechnology. His current research interests focus on RNA therapeutics, molecular oncology, engineered protein nanocages, targeted delivery and the translation of molecular technologies into biomedical applications.