

## Scientific Curriculum of Nazzareno Capitanio



### Personal Information:

Name: Nazzareno Capitanio

Nationality: Italian

Date of Birth: 7th February 1956

**Actual Position:** Full professor of Biochemistry – University of Foggia –

School of Medicine

Department of Clinical and Experimental Medicine – Laboratory of Medical Chemistry and Biochemistry.

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### Education:

1974 Scientific Liceum "E. Fermi" - Bari

1979 Degree cum laude in Biological Science at the University of Bari.

### Scientific career and Employment

1985 Researcher of Biochemistry at the Institute of Medical Chemistry and Biochemistry (Un. of Bari – Faculty of Medicine).

1992 Associate professor of Biochemistry at the Institute of Medical Chemistry and Biochemistry (Un. of Bari – Faculty of Medicine).

2000 Full professor of Biochemical Sciences at the University of Foggia (dep. of Biomedical Science - Faculty of Medicine).

### Research activities and interests

1980--1982: Aerobic metabolism in experimental tumours; Na<sup>+</sup>(K<sup>+</sup>)/H<sup>+</sup> exchangers and mitochondrial membrane potential.

1983: Electrical surface potentials in proteoliposomes (Athens, Dip. Of Biology, Nuclear Research Center Democritus – visiting scientist in the research group headed by dr. G. Papageorgeou).

1986: Functional characterization of tissue-specific isoforms of mammalian cytochrome c oxidase (Marburg, Inst. of Biochemistry, Univ. "Philipps" - visiting scientist in the research group headed by dr. B. Kadenbach).

1987: Purification and structural characterization of cytochrome complexes from aerobic bacteria (Eugene, Inst. of Molecular Biology, Univ. of Oregon - visiting scientist in the research group headed by dr. R. Capaldi).

1989: Identification and characterization of genes involved in the biogenesis of the yeast cytochrome oxidase (New York, Dip. of Biological Science, Univ. Columbia - visiting scientist in the research group headed by dr. A. Tzagaloff).

1995: Studies of the redox-Bohr effect in purified cytochromes (St. Catharines, Canada, Dip. of Biological Science, Univ. "Brock" - visiting scientist in the research group headed by dr. P. Nicholls)

1982 --: Mechanism of conversion of redox energy in proton pumping heme-protein complexes of mitochondrial and bacterial respiratory chains; kinetic, thermodynamic and allosteric control of redox-linked proton pumps and its role under physio-pathological conditions; molecular modelling of redox proton pumps based on co-operative linkage between

- transitions at redox centers and pK shift of acid/base groups in the protein.
- 2001 --: Mitochondrial and extra-mitochondrial oxidative metabolism in adult stem cell homeostasis; structural and functional characterization of NADPH oxidases and their role in redox signaling; studies on the mechanism of control of HIF.
- 2003 --: Flux control modelling of the mitochondrial respiratory chain.
- 2004 --: Study of HCV-mediated alterations of mitochondrial oxidative metabolism in in vitro cell systems of viral infection.
- 2005 --: Biochemical and genetic analysis of cells derived from patients affected by acute myeloid leukaemia, neuromuscular diseases and Parkinson. Study of mitochondrial dysfunction in murine model of NASH. Pathogenetic role of low-density lipoprotein in the development of chronic kidney disease.
- 2006 --: Development of diagnostic protocols by confocal microscopy analysis of morpho-functional features of mitochondria at a single organelle resolution. Bio safety analysis of engineered mesenchymal stem cell in regenerative medicine.
- 2007--: Heavy metals and carcinogenesis: role of gap junctional intercellular communication
- 2008--: "Mitotoxicity" of local anaesthetics; bioenergizers and resuscitation fluids
- 2011--: Bioenergetics characterization of cancer stem cells. Interplay between circadian rhythms and energy metabolism.

**Bibliometric data** (from Thomson Reuters ISI Web of Knowledge - update December 2016)

N° of publications	93
Average I.F.	≈ 4.8
H index	22
Total N° of citations	1564

**Organizing appointments (last 10 years):**

Organizer and co-organizer of national and international meetings and congresses among Which (last ten years):

- 13th European Bioenergetics Conference (EBEC), Pisa 21-26 August 2004;
- International Congress, "Mitochondria, from Molecular Insight to Physiology and Pathology" Bari 17-22 December 2006;
- International Workshop on "HCV Infection and Disease: from molecular virology to clinical management", Foggia 10-11 April, 2008.
- International Symposium on "Mitochondrial Physiology and Pathology" IUBMB Symposium S1/2008, Bari, 22-26 June, 2008.
- 2010, 2011, 2012, 2013: Annual meetings of the Italian Group of Bioenergetics and Biomembranes.

**Grant awards as principal investigator**

- 1997-1999 Cofin-PRIN project : Genetic engineering and expression of respiratory enzymes - Coordinator of the local unit
- 2008-2010 Cofin-PRIN project: Bioenergetics: molecular mechanisms, control and physiopathological role (2008FJJHKM) - Coordinator of the national project

**Professional societies:**

Italian Society of Biochemistry  
 Italian Group of Bioenergetics and Biomembranes – member of the directive committee (2002-2006);

2009--2012: vice president)  
Mitochondrial Physiology Society (MiP)

**Institutional appointments:**

2002-2008 President of the degree-course of Biomedical Laboratory Technician;  
2004-2008 Member of the Didactic Committee of the University of Foggia;  
2002--- Member of the Scientific Committee of the University of Foggia;  
2005-2010 Vice-dean of the Faculty of Medicine and Surgery of the University of Foggia.  
2011--- Component of the Internal Committee of Evaluation of the University of Foggia.  
2012--- Component of the Academic Senate of the University of Foggia.

Signature



Mazzino Caporale

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