



Curriculum Vitae

Personal information

Giuseppe Firrao

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Nationality Italian

Date of birth Jan 23, 1961

Gender Male

Occupational field Academy

Work experience

Dates Dec. 2010 - present

Occupation or position held Full professor

Name of employer Università di Udine

Dates Jan. 2001 - Dec. 2010

Position held Associate professor

Name of employer Università di Udine

Dates Nov. 1990 - Jan. 2001

Occupation or position held Researcher

Name of employer Università di Udine

Dates Jan. 1986 - Nov. 1990

Occupation or position held Technical Assistant

Name of employer Università di Udine

Education

Dates Feb. 2001 - Oct 2001

Title of qualification awarded Visiting Scholar supported by a fellowship issued by Italian CNR

Name and type of organisation providing education and training Micro Instruments and Systems Laboratory, University of California, Davis

Dates Feb 1994 - Jan 1995

Title of qualification awarded Visiting Scholar supported by a fellowship issued by Italian CNR

Name and type of organisation providing education and training Department of Plant Pathology, University of California, Davis

Dates July 1984

Title of qualification awarded Laurea (110/110 cum laude) in Agricultural Sciences

Name and type of organisation providing education and training Università di Milano

Skills and competences

Teaching

Dates Academic year 2000/2001 - present

Class Title Plant Pathogen Interactions

Name and type of organisation Università di Udine

Dates	Academic year 2009/2010 – present
Class Title	Mycology
Name and type of organisation	Università di Udine
Dates	Academic year 2003/2004 to 2008/2009
Class Title	Molecular diagnostics
Name and type of organisation	Università di Udine
Dates	Academic year 2002/2003 to 2004/2005
Class Title	Mycology
Name and type of organisation	Università di Verona
Dates	Academic year 1999/2000 to 2002/2003
Class Title	Biotecnology in Plant Pathology
Name and type of organisation	Università di Udine

Research

The theme that has dominated the research activity of G. Firrao has been the characterization and diagnosis of plant pathogens. In the 80s, his research focused on techniques such as electron microscopy and numerical taxonomy for the characterization of actinomycetes and coryneform plant pathogenic bacteria. In the late 80s-early 90s he moved to molecular biology of plant pathogenic fungi (*Botrytis*, *Fusarium*, *Diaporthe*) and, with primary emphasis, of mycoplasmas. He introduced the sequence analysis of 16S rRNA for the definition of specific sequences for the diagnosis of the unculturable phytoplasmas, and the purification of phytoplasma chromosomes by PFGE, a technique that paved the way to the genome analysis of these important unculturable plant pathogens. After professorship in 2000 and the establishment of his own research team, he expanded the research interests to cover strategies for the detection and prevention of contamination of mycotoxins, interactions of plant pathogenic bacteria and fungi with their hosts, genomic characterization of bacterial pathogens, while keeping emphasis on the application of new technologies. The application of nanotechnology in the diagnostics became a major topic in his research themes after a sabbatical spent at the Micro Instrument and System Laboratory in Davis, CA. The Firrao lab developed several new methods for toxin contamination prediction (using spectroscopy, hyperspectral imaging, neural networks, air analysis) and nucleic acid detection (using nanobiotransducer, nanopore blockade, DNA origami) for diagnostic use. The genomic studies carried out on the phytoplasmas, *Pseudomonas avellanae* and *P. syringae* pv. *actinidiae* clarified the origin of important diseases and provided relevant hints for their control.

The main topics of the research currently carried out by the Firrao's lab are genomics of plant pathogens and the diagnosis of pathogens and toxins using innovative methods, with emphasis on nanobiotechnology.

Honours, Awards, Memberships

Dates	2010 – present
Title awarded	Study Program Coordinator
Name and type of organisation	Second level degree program in “Plant and Animal Biotechnology” - Univ. Udine
Dates	2005 – 2007 and 2014 - present
Title awarded	Member of the Board of Directors and Vice-President for 2005-2007
Name and type of organisation	Italian Society for Plant Pathology
Dates	2008 – 2014
Title awarded	Associate Editor to 2012, then Senior Editor
Name and type of organisation	Journal of Plant Pathology,
Dates	2003 – 2007
Title awarded	Associate Editor
Name and type of organisation	Microbiology (Reading)
Dates	1999 – 2006
Title awarded	Associate Editor
Name and type of organisation	Phytopathologia Mediterranea
Dates	2000 – present
Title awarded	Member
Name and type of organisation	International Society for Plant Pathology Committee on Taxonomy of Plant Pathogenic

Bacteria

Dates	1998 – 2004
Title awarded	Team leader
Name and type of organisation	Phytoplasma working team of the International Research Project on Comparative Mycoplasmaology
Dates	1995
Title awarded	Award winner
Name and type of organisation	Diploma CIB (award of the Italian Consorzio Interuniversitario Biotecnologie for the contribution to the research in biotechnology by a young scientist)
Dates	1994 – present
Title awarded	Member, and secretary since 2008.
Name and type of organisation	International Committee on Systematic Bacteriology Subcommittee on the Taxonomy of Mollicutes

Publications

Five recent major papers	<p>Piantanida L, Naumenko D, Torelli E, Marini M, Bauer DM, Fruk L, Firrao G, Lazzarino M. (2015) Plasmon resonance tuning using DNA origami actuation. Chem Commun (Camb). 51(23):4789-92. doi: 10.1039/c5cc00778j</p> <p>Torelli E, Marini M, Palmano S, Piantanida L, Polano C, Scarpellini A, Lazzarino M, Firrao G (2014) A DNA Origami Nanorobot Controlled by Nucleic Acid Hybridization. SMALL 14:2918-2926 doi: 10.1002/smll.201400245i</p> <p>Firrao G, Martini M, Ermacora P, Loi N, Torelli E, Foissac X, Carle P, Kirkpatrick BC, Liefiting L, Schneider B, Marzachì C, Palmano S. (2013) Genome wide sequence analysis grants unbiased definition of species boundaries in "<i>Candidatus</i> Phytoplasma". Syst Appl Microbiol. 2013 Sep 10. doi:p11: S0723-2020(13)00117-3.10.1016/j.syapm.2013.07.003</p> <p>Saccardo F, Martini M, Palmano S, Ermacora P, Scortichini M, Loi N, Firrao G. (2012) Genome drafts of four phytoplasma strains of the ribosomal group 16SrIII. Microbiology. 158:2805-14</p> <p>Scortichini M, Marcelletti S, Ferrante P, Petriccione M, Firrao G (2012). <i>Pseudomonas syringae</i> pv. <i>actinidiae</i>: a re-emerging, multi-faceted, pandemic pathogen. Molecular Plant Pathology. 13:631-40. doi:10.1111/j.1364-3703.2012.00788.x</p>
Other publications	<p>Follow this link to retrieve PubMed indexed papers: http://www.ncbi.nlm.nih.gov/pubmed/?term=Firrao+G</p> <p>Follow this link to retrieve Google Scholar indexed papers: http://scholar.google.com/citations?user=pBfBU1kAAAj&hl=en</p>