

# Francesca Giampieri



Via Guido Miglioli, 5  
Ancona, Italy  
Driving Licence (Category B)  
Date of birth: 18/11/1979  
Citizenship: Italian

+39 339 1318106  
f.giampieri@univpm.it

## EDUCATION

- July 1998: **High School Diploma** (Scientific Studies, 55/60).
- March 2007: Graduation in **Biological Sciences** with a thesis entitled “Evaluation of effect of beta interferon in patients with multiple sclerosis”, Faculty of Biological Sciences, Polytechnic University of Marche (110/110 cum laude).
- February 2013: **PhD**, with a thesis entitled “Evaluation of the role of dietary antioxidants against oxidative stress in rats”, Faculty of Medicine, Polytechnic University of Marche.
- September 2014: **Specialization on Food Science**, with a thesis entitled “Evaluation of molecular mechanisms of strawberry polyphenols in aging”, Faculty of Medicine, Polytechnic University of Marche (50/50 cum laude).
- December 2017: Credited as **Associate Professor** in Biochemistry by Italian Minister for Science and University.

## WORK EXPERIENCE

- October 2018-now: **Post-Doctoral Research Fellow**, Polytechnic University of Marche.
- April 2017-March 2018: **Post-Doctoral Research Fellow**, Polytechnic University of Marche.
- April 2015-August 2016: **Post-Doctoral Researcher Fellow** of Umberto Veronesi Foundation.
- April 2014-March 2015: **Post-Doctoral Research Fellow**, Polytechnic University of Marche.
- April 2013-March 2014: **Post-Doctoral Research Fellow**, Polytechnic University of Marche.

## TEACHING ACTIVITIES

- 2016-now: **Professor** of “Master in Vegetarian Nutrition and Dietetics”, International Masters on-line in Nutrition and Dietetics, Polytechnic University of Marche, Ancona, Italy.
- 2015-now: **Professor** of “Master in Vegetarian Nutrition and Dietetics”, Universidad Europea del Atlantico (UEA), Santander, Spain.
- 2015-now: **Professor** of PhD course in “Nutrition”, Universidad Internacional Iberoamericana (UNINI), Campeche, Mexico.
- 2014-now: **Supervisor** of more than 50 student thesis of International Masters on-line in Nutrition and Dietetics, Ibero-American University Foundation (FUNIBER).
- 2012-now: **Co-supervisor** of 4 PhD students, Polytechnic University of Marche.

## PERSONAL SKILLS AND COMPETENCES

### LANGUAGES

- English: Fluent written and spoken
- Spanish: sufficient command of written and spoken

## COMPUTER KNOWLEDGE

- Experienced use of microsoft office 365
- Experienced use of the main browsers

## SCIENTIFIC RESEARCHER ACTIVITIES

### PARTICIPATION IN NATIONAL AND INTERNATIONAL PROJECTS

- 2018-2020: Progetto strategico di Ateneo “Effect of berry consumption on ovarian cancer prevention: the epigenetic role of dietary polyphenols”.
- Ricerca scientifica di Ateneo 2018: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- 2017-2019: “Estudio de las propiedades físico-química y biológicas de mieles monoflorales nativas del Ecuador” (VET.JMA.17.01), funded by Universidad de Las Américas, Quito, Ecuador.
- 2017-2019: “Identificación y estudio de las propiedades Biológicas de compuestos bioactivos presentes en frutos, plantas Medicinales y aromáticas consumidas en Ecuador” (VET.JMA.17.02), funded by Universidad de Las Américas, Quito, Ecuador.
- Ricerca scientifica di Ateneo 2017: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- 2016-2020: GoodBerry Project. European Union’s Horizon 2020 research and innovation programme under grant agreement No 679303.
- Ricerca scientifica di Ateneo 2016: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- Ricerca scientifica di Ateneo 2015: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- Ricerca scientifica di Ateneo 2014: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- Ricerca scientifica di Ateneo 2013: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- Ricerca scientifica di Ateneo 2012: Stress ossidativo e ruolo degli antiossidanti: aspetti biomedico-clinici e nutrizionali.
- 2013-2015: Cooperazione Scientifica e Tecnologica, Ministero Affari Esteri, Programma esecutivo Italia - Serbia cod. n. RS13MO1.
- 2011-2014: EUBerry Project: EU FP7 KBBE-2010-4 Grant Agreement No. 265942.

### OTHER PROFESSIONAL TASKS AND BIBLIOMETRIC EVALUATION OF SCIENTIFIC PRODUCTION

- 2016: Journal of Alzheimer’s disease (IOS Press, ISSN 1387-2877). **Associate Editor.**
- 2016: International Journal of Molecular Sciences” (MDPI, ISSN 1661-6596), Special Issue “Bioactive Phytochemicals and Functional Food Ingredients in Fruits and Vegetables 2016”, **Guest Editor.**
- 2016-2017: Nutrients (MDPI, ISSN 2072-6643), Special Issue “Antioxidants in Health and Disease”, **Guest Editor.**

- 2016-2017: International Journal of Molecular Sciences (MDPI, ISSN 1661-6596), Special Issue “Bioactive Phytochemicals and Functional Food Ingredients in Fruits and Vegetables 2017”, **Guest Editor**.
- 2016-now: Antioxidants (MDPI, ISSN 2076-3921), **Editorial Board member**.
- 2016-now: Journal of Berry Research (IOS Press, ISSN 1878-5093), **Associate Editor**.
- 2016-now: Annals of Translational Medicine (AME Publishing Company, ISSN 2305-5847), **Editorial Board member**.
- 2017-now: Molecules (MDPI, ISSN 1420-3049), **Editorial Board member**.
- 2017-now: International Journal of Molecular Sciences- Sez. “Bioactives and Nutraceuticals”, **Editorial Board member**.
- 2018: Nutrients (MDPI, ISSN 2072-6643), Special Issue “Phytochemicals in Health and Disease”, **Guest Editor**.
- 2018-now: Diseases (MDPI, ISSN 2079-9721), Special Issue “Food Bioactive Compounds and their Role in Diseases”, **Guest Editor**.

#### **BIBLIOMETRIC EVALUATION OF SCIENTIFIC PRODUCTION**

- Web of Science database: 119 papers, 4807 citations, h-index 26, **n. 18 Highly Cited Papers**.
- SCOPUS: 113 papers, 4397 citations, h-index = 26.
- GOOGLE Scholar: 149 papers, 11.059 citations, h-index = 30, i10-index = 62
- PubMed: 73 papers.

#### **REVIEWER ACTIVITIES:**

- **International journals:** Nutrition, Metabolism and Cardiovascular Diseases; Clinical Nutrition; LWT - Food Science and Technology; International Journal of Nanomedicine; Molecules; International Journal of Molecular Sciences; Nutrients; Food Research International; Food Chemistry; Current Medicinal Chemistry; Diabetes Research and Clinical Practice; Journal of Berry Research; Food & Function; Mediterranean Journal of Nutrition and Metabolism; Journal of Functional Food; Trends in Food Science & Technology.
- **International projects:**
  - >2016-now: Scientific Reviewer for the Croatian Science Foundation (HRZZ), Zagabria, Croatia.
  - >2017-now: Scientific Reviewer for the National Fund for Scientific and Technological Development (FONDECYT) of the Chilean National Commission for Scientific and Technological Research (CONICYT).

#### **PARTICIPATION IN INTERNATIONAL CONGRESS AS INVITED SPEAKER OR AS MEMBER OF SCIENTIFIC COMMITTEE**

- 2019: “First International Conference on Natural Toxicology and Pharmacology (1-ICNTP)”, Guangzhou, China, 7-11 August

- 2019(**invited speaker**).
- 2019: “Workshop: Composti bioattivi naturali: stato dell’arte, prospettive e sfide future”, Polytechnic University of Marche, Ancona, Italy, 16 April 2019 (**invited speaker**).
  - 2018: 3<sup>rd</sup> International symposium on Phytochemicals in Food and Medicine, Kunming, China, 25-30 August 2018 (**member of Scientific Committee**).
  - 2018: Innovation Market Place Day, Your Future Festival, Polytechnic University of Marche, Ancona, Italy, 17 May 2018 (**invited speaker**).
  - 2017: 2nd International symposium on Phytochemicals in Food and Medicine, Fuzhou, China, 07-10 April 2017 (**member of Scientific Committee**).
  - 2016: VIII Congreso Nacional de Apicultura, Granada, Spagna, 03-05 November 2016 (**member of Scientific Committee**).
  - 2015: “Workshop: Focus sulla dieta mediterranea: dati clinici ed evidenze scientifiche”, Ancona, Italia, 15 June 2015 (**member of Scientific Committee**).
  - 2014: “XXI Congresso Nazionale ADI”, Milano, Italia, 19-22 November 2014 (**member of Scientific Committee**).
  - 2014: Workshop on Developing and maintaining impactful multi-institutional teams between Kenyatta University and professors from Texas Tech University, USA and Polytechnic University of Marche, Italy. Nairobi, Kenya, 15-17 January 2014 (**invited speaker**).
  - 2013: Workshop within the Executive program for scientific and technological cooperation between the Italian Republic and the Republic of Serbia. Belgrade, Serbia, 1-4 December 2013 (**invited speaker**).
  - 2013: 7th Probiotics, prebiotics & new food”. Rome, Italy, 8-10 september, 2013 (**invited speaker**).

#### SKILLS, ACHIEVEMENTS AND AWARDS

- September 2009-now: **member of Associazione Italiana di Dietetica e Nutrizione Clinica (ADI)**.
- January 2012-now: the paper "The strawberry: Composition, nutritional quality, and impact on human health. Nutrition 2012;28:9-19. Giampieri F et al” is the **most cited paper among the 1.543 papers published on Nutrition**.
- April 2013: **2° Flaminio Fidanza Award**, V Nu.Me. Nutrition and Metabolism, Terni, Italy, 18-20 April 2013.
- April 2014: **Award** for the project “Il miele di Manuka come alternativa per la cura di ferite cutanee in pazienti diabetici”, I° Corso Residenziale ECM Nu.Me. Nutrition and Metabolism, Firenze, Italy, 2-3 April 2014.
- April 2016: **Flaminio Fidanza Award** “Spazio alle idee”, for the project “Anticancer effect of a strawberry tree honey in human colon carcinoma cell line: possibile mechanisms of anti-proliferation, apoptosis induction, ROS production and mitochondrial dysfunction”, II° Corso Residenziale ECM Nu.Me. Nutrition and Metabolism “Obesità e Diabete. La terapia: dalle Raccomandazioni alla pratica clinica”, Orvieto, Italy, 15-16 April 2016.
- September 2016: **patent** “USO DI UN ESTRATTO PER LA PREVENZIONE E/O LA CURA DEI FIBROMI UTERINI” (number 102016000089627). Inventors: Ciarmela Pasquapina, Castellucci Mario,

Islam Md Soriful, Greco Stefania, Janjusevic Milijana, Battino Maurizio, Giampieri Francesca, Forbes Hernandez Tamara Y, Gasparrini Massimiliano, Ciavattini Andrea, Giannubilo Stefano Raffaele, Mezzetti Bruno, Capocasa Franco, Mazzoni Luca.

- September 2016: **Fellowship's awardees** for the participation at the First Joint Congress of the French and Italian Photochemists and Photobiologists, Bari, 19-22 September 2016.
- July 2017: **Trainee grant** for the participation at the MiPschool 2017 MITOEAGLE, Obergurgl, Austria, 23-27 July 2017.
- January 2018: **member of the “International Natural Product Sciences Taskforce (INPST)”**.

#### **PARTICIPATION IN TRAINING COURSES, CONFERENCES AND NATIONAL AND INTERNATIONAL WORKSHOPS**

- “International Coeliac Meeting Disease”. Genoa, Italy, 19 September 2008.
- 2° Meeting Intersocietario SISA-ADI dal titolo “Dieta, attività fisica. Terapie pe la salute e prevenzione cardiovascolare”. Orvieto, Italy, 16-17 June 2009.
- Workshop SPSS “Analisi statistica per la ricerca medica e scientifica”. Roma, Italy, 20 October 2009.
- Workshop “Le sfide clinico-terapeutiche del XXI secolo: obesità, diabete, ipertensione, dislipidemie”. Roma, Italy, 21 October 2009.
- XII National Course ADI “La NutriClinica”. Roma, Italy, 21-21 October 2009.
- Workshop EPR. Milano, Italy, 27 October 2009.
- Regional Congress “Obesità: qui noctis”, promosso dall’ADI. Ancona, Italy, 26 February 2010.
- “II Congreso FESNAD”, Barcellona, Spain, 3-5 March 2010.
- “Celachia e Nutrizione” Congress, Ancona, Italy, 24 September 2010.
- Course entitled “La Nutrizione Clinica: Management nell’eccesso ponderale”. Ascoli Piceno, Italy, 14 October 2010.
- Training course “Gli Aspetti della Rendicontazione e Audit Ex Post: procedura e Documentazione Richiesta”, organizzato dall’agenzia per la Promozione della Ricerca Europea (APRE), Ancona, Italy, 15 May 2013.
- 5<sup>th</sup> Nu.Me. Terni, Italy, 18-20 April 2013.
- Congress entitled “Gusti e disgusti alimentari. Fattori genetici e ambientali”. Ancona, Italy, 24 May 2013.
- Training course “Horizon2020: il nuovo framework in ricerca e innovazione”, organizzato dall’agenzia per la Promozione della Ricerca Europea (APRE), Ancona, Italy, 12 November 2013.
- I Course Nu.Me. “La terapia del Paziente Diabetico: dalle Raccomandazioni alla Pratica Clinica”. Firenze, Italy, 2-3 April 2014.
- 8th ISANH Polyphenols World Congress, 2014, Lisboa, Portugal, 04-06 June 2014.
- International workshop “The Opportunities of European Funding for Biomedical Research on Aging: Focus on Cellular Senescence in Cardiovascular diseases and cancers”. INRCA, Ancona Italy, 29-30 September 2014.
- 2014 XF Users’ Group Meeting. Hohenkammer, Germany, 29-30 October

2014.

- XVI Piceno Congress “Nutrimi, Nutrizione Artificiale e Centralità del Paziente”, Ascoli Piceno, Italy, 14 December 2014.
- First Joint Congress of the French and Italian Photochemists and Photobiologists, Bari, Italy, 19-22 September 2016.
- VIII Meeting Stem Cell Research. Chieti, Italy, 25-27 May 2017.
- Seahorse workshop, Roma, Italy, 20 June 2017.
- 10th MiPschool 2017 MITOEAGLE, Obergurgl, Austria, 23-30 July 2017.
- 18° National Congress ANSISA “La Nutrizione Clinica per Problemi”. Milano, Italy, 17-18 November 2018.

#### **RESEARCH LINES**

In September 2007 Dr Giampieri joined the research group lead by Prof. Battino as a student of the postgraduate school in Nutrition, at the Bioenergetic Laboratory, Department of Clinical Sciences, Faculty of Medicine, Polytechnic University of Marche.

The main research lines that she has developed in about 10 years of scientific activity are described below.

#### **Role of bioactive compounds against oxidative stress**

Dr Giampieri has developed a deep expertise in the evaluation of the antioxidant effects exerted by bioactive compounds of many food matrices (strawberries, achenes, honey, olive leaves, olive oil, blackberry, guava, beeswax by-products) in several *in vitro*, *ex vivo* (red blood cells and white blood cells) and *in vivo* (rats and humans) experimental models. Since 2007, during her first year of specialization, she started to evaluate the effect of dietary bioactive compounds in mitigating the levels of free radicals and oxidative stress in different experimental conditions. The first studies were performed *in vitro* (in fibroblasts stressed with AAPH, H<sub>2</sub>O<sub>2</sub> and UV radiation) and in *ex vivo* (in human red and white blood cells) and were followed by important *in vivo* researches (on rats and humans), with the aim of assessing the impact of strawberry consumption on the key biomarkers of oxidative stress. Following the promising results obtained in these studies, Dr Giampieri carried out a doctoral research project aimed to evaluate the effect of strawberries intake in rats subjected to oxidative stress caused by Doxorubicin, confirming the *in vivo* protective property of this berry.

The studies on oxidative stress went on also during her post-doctoral period, with several *in vitro* researches aimed to understand the molecular mechanisms responsible for the antioxidant effect exerted by bioactive compounds.

#### **Role of bioactive compounds during aging**

As a part of her doctoral project, Dr Giampieri performed an *in vivo* research aimed to assess the effect of strawberry consumption in elderly rats on the main biomarkers of oxidative damage and on mitochondrial biogenesis and function. The results highlighted a significant improvement of the aging condition after strawberry consumption and the activation of the AMPK pathway which is involved in various cellular processes, underlining *for the first time* its direct involvement in strawberry effects against aging progression.

Thanks to the collaboration undertaken with the Institute of Nutrition and Food Technology of the University of Granada, a study was recently carried out with the aim of evaluating the effect of chronic consumption of different fat sources

rich in monounsaturated acids (olive oil), omega 6 (sunflower oil) or omega 3 (fish oil) polyunsaturated fatty acids in aged rats.

#### **Role of bioactive compounds against inflammation**

Together with oxidative stress, inflammation is the main cause of the most common chronic diseases. During her post-doctoral research activity, Dr Giampieri assessed the anti-inflammatory activity of bioactive compounds present in strawberries, cherries and honey in macrophages and human dermal fibroblasts stressed with the bacterial endotoxin lipopolysaccharide. The ability of these compounds to modulate the gene and protein expression of the main molecules involved in the inflammatory cascade, in the antioxidant defenses and in the mitochondrial function has been highlighted.

#### **Role of bioactive compounds against endoplasmic reticulum stress**

As a post-doctoral research fellow of the Umberto Veronesi Foundation, Dr Giampieri developed a project aimed to assess the protective effect of a polyphenol-rich strawberry extract against oxidative and endoplasmic reticulum stress in liver cell line HepG2 treated with AAPH and tunicamycin, respectively. Strawberry extract was able to protect against induced damage, by modulating the expression of proteins involved in the activation of endoplasmic reticulum stress, in antioxidant defenses and in apoptosis. The results confirmed the ability of the strawberry extract to counteract oxidative stress and showed *for the first time* its capability to protect against endoplasmic reticulum stress.

#### **Role of bioactive compounds against cancer**

During her post-doctoral research activity, Dr Giampieri carried out different studies to evaluate the anticancer effect of strawberries, oil and honey in different *in vitro* experimental models of breast cancer (A17, MCF7) and colon cancer (HCT -116 and LoVo). In these researches she tried to understand the role of bioactive compounds in decreasing cell vitality, cell proliferation and metastasizing processes, modulating the metabolism and the oxidative stress and enhancing the antitumor effects of the 5-fluorouracil drug.

Thanks to the promising results obtained *in vitro* and to the collaboration undertaken with the Department of Biomolecular Sciences of the University of Urbino and the School of Biosciences and Veterinary Medicine of the University of Camerino, an *in vivo* study was performed on syngeneic FVB mice fed with lyophilized strawberry; a significant decrease in volume and tumor mass following fruit consumption has been detected.

#### **Role of bioactive compounds against leiomyoma**

Leiomyoma is one of the most common benign tumors that affect women. This research, in collaboration with the Obstetrics and Gynecological Hospital "G. Salesi" and the Department of Experimental and Clinical Medicine, evaluated the capacity of strawberry bioactive compounds in decreasing the fibrotic feature of primary cells isolated from leiomyoma samples removed from patients undergoing hysterectomy. The results of this project were so interesting to lead to the release of a **patent** (No. 102016000089627) filed on 5 September 2016.

#### **The anti-atherosclerotic activity of bioactive compounds**

An altered lipid profile, an uncontrolled platelet aggregation and a state of chronic inflammation are some of the main risk factors that contribute to the onset of cardiovascular diseases. In this context, Dr Giampieri collaborated in a

study aimed to evaluate the effect of an acute consumption of strawberries in healthy subjects, highlighting an improvement in the lipid profile, as well as a decrease in the number of activated platelets and of the main biomarkers of oxidative stress. Then, deeper studies were performed *in vitro* (they are still ongoing), in order to understand the molecular mechanisms involved in the anti-atherosclerotic effect exerted by strawberries.

#### **Anti-microbial activity of bioactive compounds**

This recent research, developed with the Department of Life and Environmental Sciences and with the Grupo de Investigación in Biotecnología Aplicada at Biomedicine (BIOMED), Universidad de Las Américas, Ecaudor, aimed to assess the capacity of certain types of honey, from different parts of the world, to counteract the growth of numerous pathogenic bacterial strains, to prevent the formation and/or destroy pre-existing bacterial biofilms.

#### **NATIONAL AND INTERNATIONAL COLLABORATION**

- 01-04 Dicember 2013: Visiting Scientist at the laboratory leaded by Prof. Biljana Spremo-Potpaveric, Faculty of Pharmacy, Belgrade University, Serbia.
- 13-18 January 2014: **Visiting Scientist** at the laboratory leaded by Prof. Maina Mwangi, Nairobi University, Kenya.



