CURRICULUM VITAE ET STUDIORUM

Prof. ssa DEBORAH PACETTI



Full Professor in Food Science and Technology (07/F6, SSD AGR/15) at Polytechnic University of Marche, Department of Agricultural, Food and Environmental Sciences (D3A).

Department's delegate for didactic activities

President of the courses of study in Food Science and Technology (Bachelor degree) and in Food and Beverage innovation and management (Master degree) of the Polytechnic University of Marche.

https://www.univpm.it/Entra/Agraria_3/docname/idsel/30/docname/DEBORAH%20PACETTI

EDUCATION

1999_Erasmus student at the Department of Organic Chemistry, Catholic University of Nijmegen – Netherlands

2000_Master Degree in Chemistry at the University of Camerino

2003_ PhD in Food and Health at Marche Polytechnic University

PROFESSIONAL EXPIRIENCE

From 01.11. 2005 to 30.10.2016_ Researcher in Food Science and Technology at Polytechnic University of Marche, Department of Agricultural, Food and Environmental Sciences.

From 01.11.2016 to 30.11.20 _ Associated Professor in Food Science and Technology at Polytechnic University of Marche, Department of Agricultural, Food and Environmental Sciences.

TEACHING ACTIVITY AT UNIVERSITY LEVEL

From 2006 to 2009_ She was teaching the course *Technologies of production of food supplements, functional foods and special (6 CFU) in Food Science and Nutrition* Master Degree.

Accademic Year 2008/2009_She was teaching the courses of *Food Technologies 1 (6 CFU) in* Food Science Bachelor Degree.

Accademic Year 2009/2010_ She was teaching the course of *Functional Food* in Food Science and Technology Master Degree and *Instrumental analytical chemistry (8 CFU) in* Food Science Bachelor Degree.

From 2010 to 2024_ She was teaching*"Unit operations in food technology"* (9 CFU) in Food Science and Technology Bachelor Degree course.

Present_ She teaches *"Functional food design (6* CFU) in Food and Beverage innovation and management in Master Degree course and *"Wine Chemistry"* (6CFU) in Agricultural Science Bachelor Degree course at Polytechnic University of Marche (Department of Agricultural, Food and Environmental Sciences).

ACADEMIC ACTIVITY

From 2013 to 2017_ She was responsible for the quality of Food Science and Technology, Bachelor Degree course.

From 2011 at the present_ she was a member of Department's Committee for assigning research funds.

From 2013 at the present_ She is a member of the Academic Board of PhD in Agricultural, Food And Environmental Sciences, based at the Polytechnic University of Marche.

From 2018 to 2020_ She was member of Accedemic Senate of Marche Polytechnic University

From 2022 at 2025 Deputy director of the Department of Agricultural, Food and Environmental Sciences

From 2021 at the present_ She is President of the courses of study in Food Science and Technology (Bachelor degree) and in Food and Beverage innovation and management (Master degree) of the Polytechnic University of Marche

From 2025 at the present Secretary General of UniAdrion

RESEARCH AREA and SCIENTIFIC EXPERTISES

She has got specific abilities in:

- Characterization of polar (phospholipids and glycerolipids molecular species, phytosterols) and nonpolar lipids (furan fatty acids, conjugated linoleic acids, conjugated linolenic acids, triglycerides) from animal and plant matrices, by using advanced chromatographic techniques, such as gas-chromatography (GC) and UPLC coupled with mass spectrometry of the first and second order (MS2).
- Characterization of antioxidants compounds (carotenoids, tocopherols, glucosinolates) in foods by using UPLC coupled with mass spectrometric (MS), diode array (DAD) and fluorimeter (FL) detectors
- Formulation of antioxidants (coenzyme Q 10, vitamin E) enriched foods
- Evaluation of health-promoting and/or disease-preventing property of functional foods through the study of the existing interaction among biologically active molecules and the onset of pathologies
- Characterization of the lipid composition and antioxidants in human plasma before and after the dietary supplementation with antioxidant-enriched foods
- Evaluation of the impact of technological processes on carotenoids, tocopherols and glucosinolates contents in animal and vegetable foods.

Her recent research activity deals mainly with the:

- evaluation of the impact of mild oven cooking treatments (steaming, sous-vide) on animal and vegetable foods
- application of industrial vegetable by-products as functional ingredients for bakery products and fermented beverages production
- application of insect flour as functional ingredients for bakery products

PUBLICATIONS IN PEER-REVIEWED JOURNALS

Her activity research is documented by 103 articles in international scientific journals and 8 book chapters present in the database with ISI impact factor (**Scopus** h-index=27; citations=2556).

RESEARCH PROJECTS PARTECIPATION AND COORDINATION

During her research career, she was involved as participant in the following projects:

- From 2003 to 2005_ Progetto Bando 2002 funded by Fondazione Cariverona, entitled: *Studio di nuove strategie terapeutiche per il trattamento della fibrosi epatica_ Study of new therapeutic strategies for the treatment of liver fibrosis*.
  Principal Investigator: Prof. Antonio Benedetti, Polytechnic University of Marche
  Developed research activities: Evaluation of the effects of omega 3 enriched diets on lipid composition of mice hepatocyte.

- From 2006 to 2008_ PRIN Anno 2004 - *prot. 2004077052* funded by Italian Ministry of Education, University and Research, entitled: *Quality improvement and chain traceability of pork meat products*.
  Principal Investigator: Prof. Natale Frega, Polytechnic University of Marche.
  Developed research activities: Effect of the dietary supplementation with high-oleic sunflower oil and α-tocopheryl acetat on pork meat lipid profile.

- From 2010 to 2014_ INDUSTRIA 2015.- New Technologies for "Made in Italy"- Program n. MI01_00148 funded by Italian Ministry of Economic Development entitled: *Functional nutrition in the agro-nutritional supply chain (pig, chicken and rabbit), for the improvement of animal welfare and for the transfer of nutritional functional components to the improvement of human health*. National Coordinator: G.I.MA. Spa.
  Developed research activities: Enrichment in Vitamin E, conjugated linoleic fatty acids, omega 3 fatty acid of *pig, chicken and rabbit*.

- From - 2011 to 2013_ PRIN Anno 2009 - prot. 2009KCP5TY funded by Italian Ministry of Education, University and Research, entitled: *Innovative technologies, quality and typicality of Italian virgin oils from seeds and fruits.*
  Principal investigator: Prof. Natale Frega, Polytechnic University of Marche
  Developed research activities: Evaluation of the technological process on antioxidant profile of olive and seed oils

- From 2013 to 2016_ Project Misura 1.2.4 (2011) funded by Marche Region entitled: *Development of new processes and products throughout the dairy chain*.
  Coordinator COOPERLAT TREVALLI
  Developed research activities: Evaluation of the cow diet on chemical composition of milk

- From 2014 to 2016_ Project Misura 1.2.4 (2013) funded by Regione Marche entitled: *Production of olive-based patè by using a by-product of biological extra-virgin olive oil manufacturing*.
  Coordinator CONSORZIO AGRICOLO ADOTTO UNA FATTORIA
  Developed research activities: Formulation of olive-based pate evaluation of its nutritional quality

- From 2017 to 2020, Strategic Project funded by Polytechnic University of Marche entitled: *The pomegranate seeds as a functional food: a possible, novel nutriceutical approach to obesity and associated diseases*.
  Principal Investigator: Prof. Saverio Cinti, Polytechnic University of Marche
  Developed research activities: Characterization of bioactive compounds from pomegranate seed and formulation of nutraceutical extract.

She has coordinated the activities of the operative unit UNIVPM in the following projects:

- From 2012 to 2013_Project funded by Pontificia Universidad Javeriana (Bogotá, Colombia) entitled: *Palm oil and cardiovascular disease: effects of red palm oilein-rich diet on plasma lipid pattern in hypercholesterolemic patients*.
  Principal investigator: Prof. Paolo Lucci, Pontificia Universidad Javeriana.

- From 2013 to 2014_Project funded by Pontificia Universidad Javeriana (Bogotá, Colombia) entitled: *Effect of Fruit Ripening on Fatty Acids Regiodistribution and Glycerides Molecular Species of Oil from Interspecific Hybrid Elaeis oleifera x E. guineensis Grown in Colombia*.
  Principal investigator: Prof. Paolo Lucci, Pontificia Universidad Javeriana.

Currently, she is involved in the following projects:

- INSHORE (2020-2022)_ Project funded by Marche Region (PSR Marche 2014/2020, misura 16.1), "Innovative approaches for sustainable and circular horticulture in aquaponic systems"
  Principal investigator: Prof. Paola Riolo Polytechnic University of Marche.

- BSFLYGREEN (2020-2022) _ Project funded by Marche Region (PSR Marche 2014/2020, misura 16.1), Residues bioconversion processes of the agro-industrial chain through Hermetia illucens".

Principal investigator: Prof. Ester Foppa Pedretti, Polytechnic University of Marche.

- INCREASE (2020-2025) _ Project funded by Horizon 2020; (Grant agreement ID: 862862-2), "Intelligent Collections of Food Legumes Genetic Resources for European Agrofood Systems". Coordinator: Prof. Roberto Papa, Polytechnic University of Marche.

- STOPMEDWASTE (2020-2023) _ PRIMA call "Innovative Sustainable technologies to extend the shelf-life of Perishable mediterranean fresh fruit, vegetables and aromatic plants and to reduce waste".
  Coordinator: Prof. Gianfranco Romanazzi, Polytechnic University of Marche.

- SEAFENNEL4MED (2022-2025)_ PRIMA call 2021_ Innovative sustainable organic sea fennel (Crithmum maritimum L.) - based cropping systems to boost agrobiodiversity, profitability, circularity, and resilience to climate changes in Mediterranean small farms.
  Coordinator: Prof. Lucia Aquilanti, Polytechnic University of Marche.

- BEEFLOWER (2022-2025)_ Project funded by Marche Region (PSR Marche 2014/2020, misura 16.1), "Innovative cropping systems in sunflower agri-food chain for biodiversity and ecosystem service protection and for use of new protein sources" Principal investigator: Prof. Paola Riolo Polytechnic University of Marche
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- **WINFOOD (2022-2025)** Coordinator (PI) of the Project "Vegetable by-products from industrial processing: from waste to functional ingredient for innovative food formulation" funded by Marche region (PSR Marche 2014/2020, misura 16.1).
- **SEAFENNEL4MED (2022-2025) WP leader** of the International European Project "Innovative sustainable organic sea fennel (Crithmum maritimum L.) – based cropping systems to boost agrobiodiversity, profitability, circularity, and resilience to climate changes in Mediterranean small farms", funded by PRIMA. She was in charge of multi-actor internal and external communication and technology transfer to ensure participation of stakeholders.

SCIENTIFIC RESPONSIBILITY FOR THE RESEARCH ACTIVITIES OF RESEARCH FELLOWS

- From 01.02.2015 to 28.02.2017_ Quali-quantitative composition of oxidized fatty acid of the substrates of animal origin" Dott. Michele Balzano
- From 1.04.2017 to 31.03.2018_ Evaluation of the qaulity parameters in food undergone to thermal treatments Dott. Michele Balzano_
- From 1.12.21 to 31.12.2023 _ Lipidomic analysis for nutritional assesment of food legume genetic resources Dott.ssa Kuchalskaja
- From 1.11.21 to 31.10.2023 _Technological traits of plant proteic foods Dott.ssa Ancuta Nartea
- From 15.04.24 to date _ Assessment of the nutritional quality of sunflower products and by-products in the sunflower value chain" Dott.ssa Lama ISMAIEL
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Supervision of PhD THESIS

She has supervised as TUTOR the following PhD theses:

- **2012-2015**. Hybrid Palm Oil (Elaeis oleifera×Elaeis guineensis) and effects on the human health. PhD student: Riccardo Gagliardi, PhD school in Agricultural, Food and Environmental Science of Università Politecnica delle Marche (Final Dissertation: 24 Febbraio 2016).
- **2015-2018**. Technological Innovations applied to the Winemaking Tradition, PhD student Fabrizio Rossetti, PhD school in Agricultural, Food and Environmental Science of Università Politecnica delle Marche (Final Dissertation:20 Marzo 2019).
- **2016-2019.** Effects of cooking methods on bioactive compounds of cauliflowers and fishes. PhD Student Alessandra Giardinieri; PhD school in Agricultural, Food and Environmental Science of Università Politecnica delle Marche (Final Dissertation 20 Marzo 2020).

- **2018-2021.** Vegetable by-products as a source of bioactive compounds for food applications. PhD Student: Ancuta Nartea; PhD school in Agricultural, Food and Environmental Science of Università Politecnica Delle Marche (Final Dissertation 29 Marzo 2022).
- **2021-2024** Food industrial waste as starting material for producing innovative food packaging and functional foods. PhD Student: Oghenetega Lois Orhotohwo; PhD school in Agricultural, Food and Environmental Science of Università Politecnica Delle Marche (Final Dissertation 28 Marzo 2025).
- **2022-to date** Development of functional ingredients using by-products from agro-industrial process. PhD Student: Benedetta Fanesi; PhD school in Agricultural, Food and Environmental Science of Università Politecnica Delle Marche

b. Co-Tutor delle attività di ricerca svolte nell'ambito della seguente tesi di dottorato:

- **2015-2019.** New Approach to investigate the quality of Parmigiano Reggiano cheese: coupling of structure virtualization to thermal, rheological and fracture properties, discussa dalla Dott.ssa Elisa Sabatinelli, Dottorato di Ricerca in in Scienze Agrarie, Alimentari ed Ambientali (XXXI cycle) dell'Università Politecnica delle Marche (Periodo di svolgimento del dottorato 2015 – 2019. Data della discussione, 20 Marzo 2020).
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TRANSFER OF KNOWLEDGE TO THE SPIN-OFF

She was academic Academic Head of Spin Off IntegrityKEY S.r.l of the Polytechnic University of Marche. IntegrityKEY Srl was a spinoff and innovative start-up of Università Politecnica delle Marche at D3A Department. IntegrityKEY provides services for the digitalization and traceability of high-quality, functional, and sustainable foods, using computer technologies (software IntegrityKEY, blockchain, and IoT devices) and know-how in food technology.

She is Member of Scientific Committee of the National Reserch Center AGRIBIOSERV (Centro di ricerca per l'innovazione alimentare), research center for innovation in agri-food sector, 2023 – 2026

PATENT

She is inventor of the patent _"Pomegranate ethanolic extract with anti-diabetes and anti-obesity effect.
Priority number 102020000017908
Patent owner: Università Politecnica delle Marche; INSERM (Institute National de la Sante et de la Recherche Medicale); Universitè Cote D'Azur
Inventors: Saverio Cinti, Antonio Giordano, Daniela Marzioni, Natale Giuseppe Frega, Deborah Pacetti, Gianluca Svegliati Baroni, Adele Finco, Fabio Taffetani, Jessica Perugini, Michele Balzano, Irene Pierantonelli, Deborah Bentivoglio, Christian Dani
Technological area: Health and Biomedical

MEMBERSHIP TO SCIENTIFIC SOCIETY

Member of Italian Society of Food Science and Technology (SISTAL) and Institute of Food Technologists (IFT).
Accademic member of Accademia dei Georgofili, Sezione Centro – Est, Florence.Member of Italian Researcher Association of Research in Nutrition and Foods (Associazione Ricercatori Nutrizione Alimenti-ARNA).

Ancona, 14.01.25

