

## PERSONAL INFORMATION

## Rossella Dorati



📍 Dept. Drug Sciences, University of Pavia (Italy)

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*Female | 10/11/1976 | Italian*

## WORK EXPERIENCE

01/10/2017 – CURRENT

### Associate Professor

Dept. Drug Sciences, University of Pavia

Teach classes pertinent to pharmaceutical technology and biotechnological formulations. Teach and speak in seminars, conduct research, supervise students, and attend conferences.

Lead and coordinate research activity, manage research and other collaborative partnerships with other educational institutions or other external bodies.

Lead and develop internal and external networks to foster collaboration and share information and ideas.

Support the development and implementation of the research and enterprise strategy.

2010 – 30.09.2017

### Assistant Professor

Dept. Drug Sciences, University of Pavia

Teach and conduct research. Assist full professors, guide, and supervise graduates, and spend time conducting investigations and studies. Involved in different university committees.

2016 – 2021

### Founder and member of the academic spin off Polymerix - POLYMER matRIX for life

Technical and Scientific Park (PTS), University of Pavia.

Polymerix - POLYMER matRIX for life Viale Taramelli 24, 27100 Pavia

01/10/2015 – 30/09/2017

### Visiting Scientist

US Army Institute of Surgical Research, JBSA Fort Sam Houston

During this period, she also collaborated with Southwest Research Institute (SwRI) Pharmaceuticals and Bioengineering Department, Chemistry and Chemical Engineering Division, (San Antonio, TX)

07/2010 – 10/2015

### Assistant Professor

Dept Drug Sciences, University of Pavia

Teach and conduct research. Assist full professors, guide, and supervise graduates, and spend time conducting investigations and studies. Involved in different university committees.

07/2006 – 07/2010

### Post-doctoral Research Fellowship

Dept Drug Sciences, University of Pavia

Provide scientific, methodological, and conceptual expertise to assist in the development and/or commercialization of a pharma and biotechnological products

2007 – 2009

### Regulatory Consultant

Bayer S.p.A. Animal Health Care division – Regulatory Affairs

Milan, Italy

Revision of registration dossiers for veterinary medicinal products

01/2006 – 07/2006

### Post-doctoral Research Fellowship

Dept. Pharmaceutical Science, University of Kentucky

Lexington (KY), United States

Provide scientific, methodological, and conceptual expertise to assist in the development and/or commercialization of a pharma and biotechnological products

10/2004 – 06/2005

**Research Fellowship**

Dept. Pharmaceutical Science, University of Kentucky  
Lexington (KY), United States

Acquire scientific, methodological, and conceptual expertise in the development of pharma and biotechnological products

**EDUCATION AND TRAINING**

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10/2020 – 10/2022

**Executive MBA**

MIB School of Management, Trieste, Friuli-Venezia Giulia, IT

Accounting & Finance, Economics & Decision Sciences, Marketing, Management and Strategy

2008

**II Level master's degree in Pharmaceutical Technology & Regulatory Affairs**

Dept. Drug Sciences, University of Pavia (Italy)

Knowledge of the regulatory activities pre- and post-authorization marketing, and the rules (typically the Good Manufacturing/Distribution Rules) that govern the industrial production and distribution of medicines. Emphasis is placed on the quality system that governs all the activities of a company and helps to improve its reliability and competitiveness

10/2004 to 06/2005

**Research Fellowship over the course of PhD Program**

College of Pharmacy, University of Kentucky, Lexington, KY, US

Training and experience for pharmaceutical formulation, development, and manufacturing in any area of basic or applied research in pharmaceutical sector

2005

**PhD in Medicinal Chemistry and Pharmaceutical Technology**

Dept. Drug Sciences, University of Pavia (Italy)

Know-how and skills to operate, with a high degree of qualification, in all areas directly or indirectly related to the design, development, production and control of medicines, ATMPs, medical devices and health products

2002

**Master's degree in Medicinal Chemistry and Pharmaceutical Technology**

Dept. Drug Sciences, University of Pavia (Italy)

**WORK ACTIVITIES**

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2022 - 2025

Vice President of the Master's Education Board in Medical and Pharmaceutical Biotechnology, University of Pavia.

2019 - 2022

Vice President of the Master's Education Board in Medical and Pharmaceutical Biotechnology, University of Pavia.

2017 - current

Board member of Doctoral School in Health Technologies, Bioengineering and Bioinformatics (HTBB) at University of Pavia, Pavia (Italy)

2018 - current

ongoing Member of Faculty Join Academic Committee at Degree in Pharmacy and in Medicinal Chemistry and Pharmaceutical Technology, University of Pavia.

2018 - current

Member of Faculty Join Academic Committee for Master Degree in Medical and Pharmaceutical Biotechnologies, University of Pavia

2018 - current

Member of Faculty Third Mission Committee, Dept. Drug Sciences, University of Pavia.

2018 - current

Member of Faculty Research Committee, Dept. Drug Sciences, University of Pavia.

Statement of scientific research topics and activity

While completing her PhD in Pharmaceutical Chemistry, Rossella research activities focused on the formulation, characterization, and study of sterile formulations made of biodegradable polymers intended for parenteral administration and the evaluation of physico-chemical properties and degradation performances of synthetic and natural polymers.

In 2008, She began working on the tissue engineering field focusing her research on design, development, and characterization of 3D scaffold as support for tissue regeneration and repairing, such as soft and hard tissues.

From 2015, Rossella dedicated much effort to formulate topical formulations containing an antifibrotic agent as prophylactic treatment of deep-partial thickness burns. As part of this research, she extends her knowledge and experience in the field of wound healing and development of topical formulations and skin tissue repairing.

Editorial activity

Guest Editor, Special Issue: Degradation and Biological Application belongs to the section Biomacromolecules, Biobased and Biodegradable Polymers. Polymers Journal (ISSN 2073-4360).

Guest Editor, Special Issue: Biodegradable Natural and Synthetic Polymer for Pharmaceutical Application. *Molecules Journal* (ISSN 1420-3049).

Guest Editor, Special Issue: Bio-Based Medical Textile. *Polymers Journal* (ISSN 2073-4360).

Reviewer for *Journal of Controlled Release*, *AAPS Pharmaceutical Science and Technology*, *Pharmaceutics*, *Material Sciences and Engineering C*, *Reactive and Functional Polymers*, *International Journal of Pharmaceutics*, *International Journal of Molecular Sciences (IJMS)*, *Journal of Drug Delivery Science and Technology (JDDST)*.

Invited presentations (Last 10 years)

R. Dorati, Introduction: Skin Wound Healing Process and New Emerging Technologies for Skin Wound Care and Regeneration SGAWCm Sobrafate Global Advanced Wound Care Meeting 2021, 20-25 October 2021 - Virtual Conference.

R. Dorati, Biofiber: Medicazione Avanzata Biotecnologica Simposio AFI 2020 Webinar September, 29 2020 - Virtual Webinar.

R. Dorati, Topical Drug delivery for Preventing Hypertrophic Scars in Burns AMYC-BIOMED 2020 13-14 October 2020 - Virtual Conference.

R. Dorati, BIOFIBER: Advances Textured Fiber Dressing TechShare Day 2020, November 13, 2020 - Virtual Webinar.

R. Dorati, Chitosan/Poly (Gamma-Glutamic Acid) Based Hydrogels for 3D Bio-Printing: A Preliminary Evaluation. AAPS Annual Meeting, Washington DC (USA) Nov 04-07, 2018.

R. Dorati, A bioabsorbable composite patch for esophageal reconstruction. Annual workshop 2016 CRS, Seattle (USA) July 17-20, 2016.

R. Dorati, Drug-loaded composite scaffolds in bone tissue regeneration and targeting local bacterial infections, Annual workshop 2014 CRS Italy Chpt, Florence 6-8 November.

R. Dorati, Biomaterials combined with bovine bone substitute to guide bone regeneration Biomaterials: from drug delivery to tissue engineering, CRS Italian Chapter 2012 Workshop Palermo, Italy, 8th-10th November 2012.

R. Dorati, A composite system based on chitosan and spongy bovine bone to guide bone regeneration XXI Simposio ADRITELF 13th-16th September 2012, Firenze.

R. Dorati, An Injectable in situ forming composite gel to guide bone regeneration: design and development of technology platform eCM Conferences 2012 eCM XIII: Bone fixation, Repair & Regeneration 24th-26th June 2012, Congress Center, Davos, Switzerland.

R. Dorati, Development of implantable polymeric device for long-term prevention of dirofilaria infection in dogs 8th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology March, 19th-22nd, 2012, Istanbul, Turkey.

Grants (Last 3 years)

VV3TT POC Venture Program Edition 2020: BIOFIBER Advanced Textured Fiber Dressing. 2020 – On going Budget Euro 85.000, PI: Rossella Dorati.

Blue Sky Research Project (Young Investigator): Development of a platform for controlled release of siRNA in skin wounds; prophylaxis of hypertrophic scar. Funds: BSR 2017 (University of Pavia), Project # BSR1741073. Budget Euro 95.000, Project life: 01.10.2017 – 01.12.2019. PI: Rossella Dorati.

PI of UniPV Reserch Unit: Cutin from tomato-peel waste: green source for plurality of engineered polymer products (CutToPro), Fondazione Cariplo per Economia Circolare – 2021, Budget Euro 298.620,00. 2021-ongoing.

Component of UniPv Research Unit: Integrated platform for the sustainable production of bio-based surfactants from renewable resources (BioSurf), Fondazione Cariplo 2020, Rif. 2020-1094 – Bando 2020 – Economia Circolare: ricerca per un futuro sostenibile. Budget 276.950,00 Euro. 2020-ongoing.

Component of UniPV Research Unit: PRotesi innOvaTivE per applicazioni vaScolari ed ortopedIChe e mediante Additive Manufacturing, CUP B79J22003600005, finanziamento a valore sull'Asse I, Azione 1.1.3 PON Imprese e competitività 2014 – 2020.

Component of UniPV Research Unit: Bio/nanotech @UniPV per Energia Sostenibile e Salute, 2020- ongoing. Grant Regione Lombardia, CE4WE, Budget Euro 180.719.

Component of UniPV Research Unit: Fluidica Digitale per le Scienze della Vita - DSF (Digital Smart Fluidics), CUP E11B19000810007, Call "Hub Ricerca e Innovazione" cofounded by POR FESR 2014-2020 INNOVAZIONE E COMPETITIVITÀ.

Component of UniPV Research Unit: Ricerca Corrente 2017 Grant, IRCCS Policlinico S. Matteo - A hybrid approach to the repair of esophageal defects: from bioscaffolds engineering to in vivo validation in the porcine model, grant # 08053917, IRCCS Policlinico S. Matteo Pavia (Project life: 36 Months, Budget Euro 178.000). PI: Marco Benazzo.

Component of UniPV Research Unit: Ricerca Corrente 2021 Grant IRCCS Policlinico S. Matteo (on going) - Effects of hypothermic oxygenated perfusion with Hepatocyte Growth Factor loaded Extracellular Vesicles on ischemic /reperfusion damage in a pig model of kidney transplantation from donor after circulatory death: a new strategy of drug delivery to condition kidney before transplantation, grant # 08054221 (Project life: 36 Months, Budget Euro 150.000), PI: Teresa

Rampino.

NANOREMEDI - 101072645 - GAP-101072645 H2020 HORIZON-MSCA-2021-DN-01, proposal # 101072645 Proposal Title: Functional Nanoscaffolds for Regenerative Medicine. Amount granted to the research unit 518000 €.

Programma NODES - Nord Ovest Digitale E Sostenibile (codice ECS 00000036) (PNRR) – MISSIONE 4 COMPONENTE 2, “Dalla ricerca all’impresa” INVESTIMENTO 1.5, “Creazione e rafforzamento di “Ecosistemi dell’innovazione” costruzione di “leader Territoriali di R&S” - Bando PoC Accademici – Spoke-2, Decreto Direttoriale n. 5017/2023 Title Cutina: BIOpolimero sostenibile e atossiCo ottenuto dA biomassa di scaRto per uso biomedicalE Amount granted to the research unit 151.191,89 €, PI: Rossella Dorati.

Patents	<p>Processo per la preparazione di un materiale a base di cutina e sue applicazioni biomedicali, domanda # 102023000010413). Inventori: Rossella Dorati, Bice Conti, Ida Genta, Rita Nasti, Giangiacomo Beretta, Stefano Trasatti Owners: UniPV 50% e UniMi 50%. Data di presentazione IT 25.05.2023, Internazionale 23.05.2024.</p> <p>3D-Patterned fiber material for the topical delivery of nucleic acid and the process for its preparation PCT WO2021064673A1. Inventors: Rossella Dorati, Bice Conti, and Ida Genta Owners: University of Pavia</p> <p>Metodo per la produzione di un tessuto a memoria di forma e usi relativi, IT patent # 102021000019256 July, 20 2021. Owner: Università degli Studi di Pavia (50%), Fondazione IRCCS Policlinico San Matteo (50%). Inventors: Bice Conti, Ida Genta, Rossella Dorati, Marco Benazzo, Silvia Pisani, Maria Antonietta Avanzini. Status – pending.</p> <p>Polymer-Encapsulated Polyhemoglobin-Based Oxygen Carrier United States Application # 15/907,519 filed February 28, 2018. Inventors: J. Ling, R. Dorati Owner: Southwest Research Institute</p> <p>Thermosensitive hydrogel formulation containing polymeric beads as sustained drug delivery system for the reduction of undesirable damage to human skin resulting from exposure to ionizing radiation Inventors: Digenis George A., Conti Bice, Dorati Rossella, Colonna Claudia, Genta Ida, Digenis Alexander G. Patent # 501553879, registered on 06/03/2011, Technology transfer to USWorldMed (Louisville, KY, USA)</p>
Technology Transfer	<p>In 2024, the BioCare team received a special mention for sustainable development at the end of the NODESL course organized by 2i3T in collaboration with NODES - North West Digital and Sustainable and University of Turin.</p> <p>In 2023, Rossella Dorati won as PI of the Egiderma team of Entrepreneurship goes International 2022, the project of University of Pavia and Master MIBE aimed at stimulating entrepreneurship and innovation through the meeting of different and complementary skills, academic community, and entrepreneurs of the local economy.</p> <p>In 2022, Rossella Dorati won as PI of the Egiderma team of Entrepreneurship goes International 2022, the project of University of Pavia and Master MIBE aimed at stimulating entrepreneurship and innovation through the meeting of different and complementary skills, academic community, and entrepreneurs of the local economy.</p> <p>In 2021, Rossella Dorati won as PI of the Egiderma team of UniVenture 2021, the project of University of Pavia and MIBE Master in partnership with the Municipality of Pavia aimed at stimulating entrepreneurship and innovation through the meeting of different and complementary skills, academic community, and entrepreneurs of the local economy. The €10,000 prize pool will be used for the foundation of a start-up.</p> <p>In 2020, Rossella Dorati obtained a grant from Vertis SGR S.p.A. (Vertis Venture 3 Technology Transfer) which operates in the field of technology transfer by investing in research projects arising from the intellectual property of universities for product development.</p>

## PERSONAL SKILLS

Mother tongue(s)	Italian
Other language(s)	English
Job-related skills	Team working ability, team coordination ability
Digital skills	Use digital devices, communication applications, and networks to access and manage information

## ADDITIONAL INFORMATION

Publications total number of publications in peer-review journals: 105  
total number of citations: 2,674  
H index: 26

 <https://orcid.org/0000-0001-5774-9547>

Relevant Publications Tottoli, E.M.; Benedetti, L.; Riva, F.; Chiesa, E.; Pisani, S.; Bruni, G.; Genta, I.; Conti, B.; Ceccarelli, G.; Dorati, R. Electrospun Fibers Loaded with Pirfenidone: An Innovative Approach for Scar Modulation in Complex

Tottoli EM, Benedetti L, Chiesa E, Pisani S, Bruni G, Genta I, Conti B, Ceccarelli G, Dorati R. Electrospun Naringin-Loaded Fibers for Preventing Scar Formation during Wound Healing. *Pharmaceutics*. 2023 Feb 23;15(3):747. doi: 10.3390/pharmaceutics15030747. PMID: 36986609.

Maria Tottoli E, Chiesa E, Ceccarelli G, Pisani S, Bruni G, Genta I, Conti B, Dorati R\* BioFiber: An advanced fibrous textured dressing to manage exudate in severe wounds. *Int J Pharm*. 2022 Sep 25;625:122073. Doi: 10.1016/j.ijpharm.2022.122073. Epub 2022 Aug 2. PMID: 35931393.

Dorati R\*, Chiesa E, Riva F, Modena T, Marconi S, Auricchio F, Genta I, Conti B. Design and optimization of 3D-bioprinted scaffold framework based on a new natural polymeric bioink. *J Pharm Pharmacol*. 2022 Jan 5;74(1):57-66. Doi: 10.1093/jpp/rgab116. PMID: 34402908.

Triacca A, Pitzanti G, Mathew E, Conti B, Dorati R\*, Lamprou DA. Stereolithography 3D printed implants: A preliminary investigation as potential local drug delivery systems to the ear. *Int J Pharm*. 2022 Mar 25;616:121529. Doi: 10.1016/j.ijpharm.2022.

Dorati R, Pisani S, Chiesa E, Genta I, Bruni G, Modena T, Conti B, Electrospun tubular vascular grafts to replace damaged peripheral arteries: A preliminary formulation study, *International Journal of Pharmaceutics*, 2021; (596): 120198. doi.org/10.1016/j.ijpharm.2021.120198

Bavaro T, Tengattini S, Rezwan R, Chiesa E, Temporini C, Dorati R, Massolini G, Conti B, Ubiali D, Terreni M. Design of epidermal growth factor immobilization on 3D biocompatible scaffolds to promote tissue repair and regeneration. *Sci Rep*. 2021;11(1):2629. doi: 10.1038/s41598-021-81905-1

Pisani S, Croce S, Chiesa E, Dorati R\*, Lenta E, Genta I, Bruni G, Mauramati S, Benazzo a, Cobianchi L, Morbini P, Calogna L, Benazzo M, Avanzini MA, Conti B Tissue Engineered Esophageal Patch by Mesenchymal Stromal Cells: Optimization of Electrospun Patch Engineering *International Journal of Molecular Sciences* 21, 1764 1-18 (2020). doi:10.3390/ijms21051764

Tottoli EM, Dorati R\*, Genta I, Chiesa E, Pisani S, Conti B. Skin Wound Healing Process and New Emerging Technologies for Skin Wound Care and Regeneration. *Pharmaceutics*. 2020;12(8):735. doi:10.3390/pharmaceutics12080735

Chiesa E, Greco A, Riva F, Tosca EM, Dorati R, Pisani S, Modena T, Conti B, Genta I. Staggered Herringbone Microfluid Device for the Manufacturing of Chitosan/TPP Nanoparticles: Systematic Optimization and Preliminary Biological Evaluation. *Int J Mol Sci*. 2019 Dec 9;20(24):6212. doi: 10.3390/ijms20246212

Medina JL, Sebastian EA, Fourcaudot AB, Dorati R, Leung KP. Pirfenidone Ointment Modulates the Burn Wound Bed in C57BL/6 Mice by Suppressing Inflammatory Responses. *Inflammation*. 2019; 42 (1): 45-53. doi: 10.1007/s10753-018-0871-y

Dorati R, Medina JL, DeLuca PP, Leung KP. Development of a Topical 48-H Release Formulation as an Anti-scarring Treatment for Deep Partial-Thickness Burns. *AAPS PharmSciTech*. 2018 Jul;19(5):2264-2275. doi: 10.1208/s12249-018-1030-3

Dorati R\*, Pisani S, Maffei G, Conti B, Modena T, Chiesa E, Bruni G, Musazzi UM, Genta I. Study on hydrophilicity and degradability of chitosan/poly(lactide-co-polycaprolactone) nanofibre blend electrospun membrane *Carbohydrate Polymers* 199, (2018), 150-160. 10.1016/j.carbpol.2018.06.050

Dorati R, Chiesa E, Pisani S, Genta I, Modena T, Bruni G, Brambilla CRM, Benazzo M, Conti B. The Effect of Process Parameters on Alignment of Tubular Electrospun Nanofibers for Tissue Regeneration Purposes, *Journal of Drug Delivery Science and Technology*, 2020, 58 (101781), doi.org/10.1016/j.jddst.2020.101781

Dorati R, De Trizio A, Genta I, Grisoli P, Merelli A, Tomasi C, Conti B. An experimental design approach to the preparation of PEGylated poly(lactide-co-glicolide) gentamicin loaded microparticles for local antibiotic delivery, *Materials Science and Engineering C -Materials for Biological Applications* 58(1), (2016), 909-917. doi.org/10.1016/j.msec.2015.09.053

Pavia, 27.05.2024



Rossella DORATI