



PERSONAL INFORMATION

Name	Maria Cristina Lavagnolo
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Links	Research ID (WoS): DWE-6582-2022 Scopus Author ID: 6506821362 ORCID: 0000-0002-2543-2278
E-mail	mariacristina.lavagnolo@unipd.it
Nationality	Italian
Date of Birth	15/08/1965
Gender	Female
Mother tongue	Italian
Other languages	English – C1

WORK EXPERIENCE

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| • Dates (from - to) | December 2018 - today |
| • Name and address of the employer | University of Padova – Dep.t of Civil Environmental & Architectural Engineering |
| • Type of business or sector | Environmental Engineering |
| • Occupation or position held | Associated professor – Environmental Engineering (ICAR/03)
Chair of the National PhD program on Scientific Technological and Social Methods Enabling Circular Economy
Vice chair of the <i>Environmental Engineering</i> master degree course
Vice chair of the <i>Sustainable Chemistry and Technologies for Circular Economy</i> master degree course |
| • Dates (from - to) | January 2019 – December 2024 |
| • Name and address of the employer | University of Kwazulu Natal, Durban, Sud Africa |
| • Type of business or sector | Environmental Engineering |
| • Occupation or position held | Honorary Research fellow |
| • Dates (from - to) | July 2002 – December 2018 |
| • Name and address of the employer | University of Padova – Dep.t of Civil Environmental & Architectural Engineering/ Department of Industrial Engineering |
| • Type of business or sector | Environmental Engineering |
| • Occupation or position held | Researcher |
| • Dates (from - to) | July 2000 – July 2002 |
| • Name and address of the employer | University of Padova – Dep.t IMAGE |
| • Type of business or sector | Environmental Engineering |
| • Occupation or position held | Post doc - Research fellow |
| • Main activities and responsibilities | Research program on "Mechanical and biological pretreated waste disposal and emissions treatments" |

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| <ul style="list-style-type: none"> • Dates (from - to) | 1998 – 2000 |
| <ul style="list-style-type: none"> • Name and address of the employer | Eurowaste srl, Padova |
| <ul style="list-style-type: none"> • Type of business or sector | Environmental Engineering Consultant |
| <ul style="list-style-type: none"> • Occupation or position held | Technical Director |
| <ul style="list-style-type: none"> • Main activities and responsibilities | Project and team coordination |
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| <ul style="list-style-type: none"> • Dates (from - to) | 1996 – 1998 |
| <ul style="list-style-type: none"> • Name and address of the employer | CISA-Centro di Ingegneria Sanitaria Ambientale, Cagliari |
| <ul style="list-style-type: none"> • Type of business or sector | Research in Environmental Sciences |
| <ul style="list-style-type: none"> • Occupation or position held | Scientific and technical coordinator |
| <ul style="list-style-type: none"> • Main activities and responsibilities | Project and team coordination |

EDUCATION AND TRAINING

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| <ul style="list-style-type: none"> • Dates (from - to) | 1993 – 1996 |
| <ul style="list-style-type: none"> • Name and type of organisation providing education and training | Politecnico di Milano, Engineering Faculty; University of Cagliari, Engineering Faculty; University of Cape Town, South Africa |
| <ul style="list-style-type: none"> • Principal subjects/Thesis | <i>Sustainable nature-based leachate treatment system</i> |
| <ul style="list-style-type: none"> • Title of qualification awarded | Doctorate in Environmental Engineering |
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| <ul style="list-style-type: none"> • Dates (from - to) | 1985 - 1992 |
| <ul style="list-style-type: none"> • Name and type of organisation providing education and training | Politecnico di Milano, Engineering Faculty |
| <ul style="list-style-type: none"> • Principal subjects/Thesis | <i>Combined Treatment of Wastewater and Leachate for Biological Phosphorous Removal</i> |
| <ul style="list-style-type: none"> • Title of qualification awarded | Graduation in Hydraulic Sanitary Engineering |

TEACHING ACTIVITIES

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| <ul style="list-style-type: none"> • Degree and master degree courses | <ul style="list-style-type: none"> • 1994–1998: Seminar activities with exercises for the course <i>Wastewater Treatment Plants</i>, Degree in Environmental Engineering, DIGITA (Department of Geoengineering and Environmental Technologies), University of Cagliari. • 1996–1997: Seminar activities for the course <i>Management of Sanitary Environmental Engineering Plants</i>, Degree in Environmental Engineering, University of Cagliari. • 1996–1998: Subject expert for the course <i>Wastewater Treatment Plants</i>, Faculty of Engineering, University of Cagliari. • 1998–2001: Seminar activities with exercises for the courses <i>Sanitary Environmental Engineering</i> and <i>Solid Waste Treatment Plants</i>, Degree in Engineering for the Environment and Territory, University of Padova. • 1998–2002: Subject expert for the course <i>Sanitary Environmental Engineering</i>, Faculty of Engineering, University of Padova. • 2001–2003: Seminar activities with exercises for the courses <i>Sanitary Environmental Engineering</i> and <i>Wastewater Treatment Plants</i>, University of Padova. • 2003–2007: Lecturer in <i>Water Treatment</i>, Master's Degree in Engineering for the Environment and Territory, University of Padova. • 2003–2010: Lecturer in <i>Sanitary Environmental Engineering Plants</i>, University of Padova. • 2007–2008: Lecturer in <i>Water Treatment</i>, University of Padova. • 2008–present: Lecturer in <i>Sanitary Environmental Engineering</i>, University of Padova. • 2010–2011: Course coordinator of <i>Waste Management in Developing Countries</i>, Master's Degree in Environmental Engineering, University of Padova. • 2011–2012: Course coordinator of <i>Water Quality and Treatment for Irrigation</i>, First Level Master's Degree in Hydraulic Reclamation and Irrigation, University of Padova. • 2017–2018: Course coordinator of <i>Wastewater Treatment</i>, First Level Master's Degree in Strategic Environmental Management, University of Padova. • 2017–2020: Course coordinator of <i>Wastewater Treatment - Part II</i>, Master's Degree in |
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Environmental Engineering, University of Padova.

- 2018–present: Lecturer in *Circular and Sustainable Waste Management*, Master's Degree in Environmental Engineering, University of Padova.
- 2019–2023: Lecturer in *Ingegneria Sanitaria Ambientale*, Specialization Course in Preventive Medicine and Hygiene, University of Padova.
- 2021 to present: Lecturer in "Circular and Sustainable Waste Management" for the master's degree in Sustainable Science and Technologies for Circular Economy, University of Padova.
- 2024 to present: Coordinator and lecturer in "Ambasciatori della sostenibilità: comprendere, promuovere e praticare la sostenibilità" for the degree in Science and Technologies for Environment.

• First level university master

- Director of the first level master in "Low-tech circular economy Europe/Africa", academic year 2024/25, University of Padova, supported by The European Union
- Director of the first level master in "Integrated management of water resources and environmental sanitation", University of Padova, in collaboration with the Ministry of Public Works and Education of Cameroon and financially supported by the European Union for the African part, academic years 2013/14, 2014/15, and 2015/16.
- Director of the first level master in "Sustainable water & waste management and environmental sanitation" from the academic year 2018/2019 to 2022/23, University of Padova in collaboration with the University of Douala and ENSTP University of Yaoundé

INTERNATIONAL TEACHING ACTIVITIES

- 2013 - 2020: Lecturer in "Environmental Sanitary Engineering" for the degree in Environmental Engineering at ENSTP - Ecole Nationale Supérieure de Travaux Publics, Yaoundé, Cameroon.
- 2015-2023: Lecturer in "Solid Waste Management & Technologies" for the degree in Environmental Engineering delivered by the University of Padova at ENSTP, Yaoundé, Cameroon.
- 2013 - 2018: Lecturer in "Water Pollution Phenomena" for the blended first level Master's in "Integrated management of water resources and environmental sanitation," funded by the European Community in collaboration with the Ministries of Public Works and the Ministry of Education of Cameroon.
- 2013 - 2007: Lecturer in "Solid Waste Management in Industrial and Developing Countries" for the blended first level Master's in "Technologies for the sustainable and intercultural management of wastes in African Countries," ENSTP in collaboration with the University of Padova.
- 2014-15: Lecturer in "Industrial Waste Management" and "Environmental Project Work" for the blended first level Master's in "Technologies for the sustainable and intercultural management of wastes in African Countries," ENSTP in collaboration with the University of Padova.
- June 2016: International seminar "Starting a new way to think water management" at the University of Fukuoka, Japan.
- December 2016: International seminar "Leachate treatment in Europe" at Tsinghua University, Beijing, China.
- December 2018: International seminar "Solid waste management in developing countries" and "Innovative landfill design" for the summer school in "Waste as a resource," at the University of KwaZulu Natal, Durban.
- December 2019: International seminar "Biological degradation of bio-plastics" and "Innovative landfill design" for the summer school in "Waste as a resource," at the University of KwaZulu Natal, Durban.

SEMINAR AND CONGRESS ORGANISATION

- General Coordinator of the International Seminar *Present and future of MSW landfilling*, Cittadella, June 1998.
- General Coordinator of the Conference *Closure and post-closure of landfills for MSW*, Castelfranco, September 1998.
- General Coordinator of the International Seminar *Treatment of MSW landfill leachate*, Venice, 1998.
- General Coordinator of the International Symposia Sardinia: solid waste management and landfill symposium, held biennially in Sardinia. Edition 1999, 2001, and 2003
- Scientific Secretary of the Seminar *Waste Environment and Health*, organized by the IWWG (International Waste Working Group) in Padova, 2008.
- Member of the Executive Committee and of the International Advisory Board of the biennial International conference *Sardinia: solid waste management and landfill symposium*, Sardinia, since 2009.
- Member of the strategic scientific committee of the biennial international conference *SUM-Symposium on Urban*

Mining, in collaboration with Tsinghua University, Beijing, since 2008.

- Co-organizer of the biennial International conference *Wastesafe-for clean, hygiene & environment friendly city through sustainable management of solid waste*, organized by KUET, Khulna Technical University, Bangladesh. Editions 2017, 2019, 2021, 2023, 2025.
- Member of the biennial International scientific committee of the *SIDISA-international conference of Sanitary Engineering*, since 2021.
- Co-organizer of the biennial conference *International Congress on Industrial and Hazardous Waste Management*, Crete, editions 2019, 2020 (2021).

NATIONAL AND INTERNATIONAL RESEARCH GROUPS

- Principal investigator of the *CEWMS-Circular Economy of Waste, Materials, and Sustainability Study Center*, University of Padova. www.cewms.dicea.unipd.it.
- Member of the Advisory Board for the project Interreg Italia-Croatia "FishNoWaste - Waste Reduction and Management in Fishing Ports of the Adriatic Sea to Promote Sustainable Fisheries". www.italy-croatia.eu/web/fishnowaste
- Vice President of the IMMAGINAFRICA association. www.immaginafrica.org.
- Member of the *Resources and Waste working group* of the RUS-network of Universities for sustainable development since 2018.
- Member of the *CIRS-Interdisciplinary Committee Waste&Health* working group since 2018.
- Member of the international working group "Water Europe" since 2020.
- Member of the international working group EUMAT Materials Platform and Alliance for Materials, working Group 5, dealing with lifecycle assessment since 2020.
- Member of the SAP-scientific advisory panel of the IWWG, since October 2017.
- Member of the international working group ORBIT science (<http://orbit-online.net/index.php/about-us>) "Waste Management Teaching Tools and information".
- Member of the international working group of the IWWG "Waste Biorefinery".
- Member of the international working group of the IWWG "Education in waste management".
- Member of the international working group of the IWWG "Waste Management in developing countries".
- Member of the CTTC, Technical Committee Contaminated Lands, since 2012.

EDITORIAL BOARD

- Member of the International Editorial Board of the JEE Journal of Ecological Engineering, Scopus indexed, since 2018.
- Managing editor of "Info from the Global World" for the international journal *Detritus* Scopus indexed, since 2018.
- Guest Editor for the international journal *Renewable Energy*, ed. Elsevier, Amsterdam, in 2017.
- Editor of *Glance at the World* for the international journal *Waste Management*, from 2012 to 2014.

RESEARCH PROJECT

- 1988-1990 - Study on the efficiency of geotextiles used as drainage material in controlled landfills, Polytechnic of Milan-ENEL CRIS. This is the first international study that investigated the behavior in landfill of geotextiles as drainage material, showing their biological clogging capacity.
- 1990-1991 - Study on the efficiency of drainage with natural granular materials in controlled landfills, University of Cagliari with MURST 60% funding. The study showed that even natural materials, in the presence of acidic leachates, are subject to rapid clogging. Similar results obtained in research by the University of Braunschweig led to favorably considering the biological pretreatment of waste before its deposit in landfills, in order to prolong the efficiency of drainages.
- 1991-1993 - Study on the biological removal of nutrients from domestic wastewater treated together with landfill leachate, University of Cagliari with funding from the Sardinia Region. It is the first international study that indicates the advantages in using leachates from urban waste rich in volatile fatty acids, in promoting the metabolism of phosphorus-accumulating bacteria in the removal of nutrients from domestic wastewater. From this study, various researches on integrated waste-water-solid waste disposal cycles began.
- 1994-1995 - Study on the combined disposal in landfill of combustion residues and biological sludges; University of Cagliari, with MURST 60% funding. The study anticipated the issue, which has become current with the Ronchi Decree that requires the pretreatment of waste, of the joint deposit in landfill of residues with organic matrix (such as sludges and pre-composted materials) and combustion residues (such as incineration ashes).
- 1994-1996 - Study on laboratory-scale and pilot-scale plants of the biological treatment of leachate; University of Cagliari-University of Genoa with funding from the Liguria Region. The project allowed the study of the biological treatment with activated sludge and the related kinetics as a function of different types of leachate.

Kinetics emerged that do not follow the classic Michaelis-Menten behavior and that show the inhibitory influence of the substrate, with reaction rates that decrease as the substrate concentrations increase.

•1995-1997 – Study on the final treatment of biologically pretreated MSW leachates. University of Cagliari, with MURST 60% funding. The aim of the study was the removal of biorefractory organic substance and ammoniacal nitrogen. Treatment systems with phytoremediation and with electrochemical oxidation were experimented. The study allowed to achieve original results of important applicative relevance.

•1998-2000 – Studies on the remediation of old landfills; University of Padova with various fundings (third-party, European project EVAPASSOLD). The studies, still ongoing, address various issues of the remediation of old landfills, such as in situ stabilization through air injection, recovery through "landfill mining", preliminary characterization of the waste mass with geophysical techniques. In this regard, for the first time internationally, explosive was used in landfill as an energizing source for the application of refraction seismics.

•1999-2000 - Studies on the emissions of old landfills; University of Padova with various fundings (third-party, MURST 60%). The study concerns both the characterization and treatment of residual leachates with simple chemical-physical methods (coagulation and precipitation) and the migration of gas (characteristics, monitoring methods, attenuation processes, diffusion models).

•2000 to present – Project on the integrated disposal cycle of wastewater-solid waste (AquaNova); University of Padova first with internal funding, then through funding for UNIVERSITY PROJECTS 2002-2005. The study, which is the first of this kind in Italy, is based on the installation (at the former IMAGE Department) and operation of a special toilet organized for the separation and separate collection of three flows (grey water, urine, feces). Grey water together with part of the urine are treated with lagooning and phytoremediation. Fecal material and part of the urine are treated with anaerobic digestion together with the putrescible organic fractions of urban solid waste.

•2002-2006 – Studies on thermophilic anaerobic digestion of biodegradable organic waste for methane production (internal fundings and third-party). Laboratory and pilot-scale tests were carried out to optimize the anaerobic digestion process through the mixing of different organic waste matrices and the control of process parameters (organic load, pH, salt content, etc).

•2005 to present– ENERGIANOVA project in collaboration with the Angelini Foundation of Belluno financed by the FOUNDATION CASSA DI RISPARMIO DI VERONA, VICENZA, BELLUNO, ANCONA. With this research project, the AquaNova system has been applied in full scale to two CAI refuges in the province of Belluno, with a 2 m3 digester for energy recovery and phytodepuration tanks for the purification of yellow and grey water through local essences.

•2005-2007 – Project on the treatment of contaminated sediments for which it is responsible for the Padova unit (PRIN 2005, with MIUR funding). In particular, it deals with verifying the phytoremediation process for the removal of contaminants from the sediments of the Venice lagoon. With the collaboration with the Faculty of Agriculture of Padova, hyper-accumulator plants are chosen for the removal of metals, pilot-scale phytoremediation plants are started, laboratory tests are set up to verify the stress points of the plants and the kinetics of removal.

•2007 to present – Project on hydrogen production from organic residues, also funded with UNIVERSITY PROJECT. The study of this project is the production of hydrogen with dark-fermentation of organic residues, through various pre-treatments of biomass, pH control, and organic load. Mono-stage and bi-stage processes are applied, with subsequent methane production, for balances and verification in energy terms.

•2009 to present – Project on phytoremediation with oleaginous essences of various wastewater (urban effluents separated at the source, landfill leachates) financed by private Companies and Entities. The study aims to maximize removal yields through low-technology processes, and closing the cycle through the production of bioenergy.

•2013 to present – Treatments of concentrated urban wastewater with UASB/Septic tank reactors (university funding), a project that fits into the verification of feasibility and sustainability of decentralized plants with simple management technologies.

•2014 – Creator and promoter of the international project "A literary café in Yaoundé, Cameroon" for the dissemination of environmental culture (financiers Veneto Region, Rotary Club Padova, Univ. of Padova).

•2015-2016 – Responsible for the University of Padova of the International Project GBRSU, for the sustainable management of waste for the city of Bissau and the choice of the new landfill site (main financier European Union, LVIA)

•2015-2016 – Responsible for the Univ. of Padova of the International Project PROSIGRU, for the strengthening of the integrated urban waste management system in Mozambique (financiers: European Union, ANAMM national association of municipalities of Mozambique, DNGA-MICOA Ministry of the environment of Mozambique)

•2015-2017 - Scientific Responsible of the project "Collection and valorization of domestic waste in Agnibilekrou, Ivory Coast". Financing entity Waldensian Church with the Ottomille 2015 call

•2016-2017 – International project of great relevance Italy-China, ROLES-Remediation of old landfill for environmental sustainability and final sink (financier MISE), which has as partner the Univ. of Tsinghua of Beijing

•2017-2019 – DATA Project, Development of Abandoned Transurban Areas (Financing entity Veneto Region). Responsible for unit 5 "Urban mining for abandoned transurban areas"

•2017 – Head of the LEVI CASES Study Center at the University of Padua for the research project "Water treatment systems powered by solar energy," UN RFP 3100002169 "Wastewater treatment systems (Solar Powered and Electric)"

•2018-2020 – iWrecks project, Industrial Wrecks Reusing Enhancing aCKnowledging Sheds (Funding entity: Veneto Region). Responsible for unit 3 "Urban mining and recycling of urban materials for the reuse of decommissioned buildings"

•2018-2020 – Head of the project "Optimization of the performance of purification plants, inserted in the territorial context for a sustainable and circular management of resources" (Funding entity: ACA, Water Consortium Company Chieti/Pescara)

•2019-2021: "Plastic free" project for CESCOT Veneto (funding: Veneto Region).

•2019-2020: Project "Biological hazards from anthropogenic pressure in agriculture: emerging risks in food intended for humans and animals" (funding: Ministry of Health)

•2020-2021: Project "Current state of urban waste treatments in Italy, divided by region, and comparison with some European countries," funded by AISA Plant

•2021-2023: "VASE, Valorisation of Agri-food Wastes for Sustainable Energy production" project, funded by LEVI CASES Study Center at the University of Padua

•2021-2022: Experimental water monitoring within the innovative NEIGHBORHOOD CONTRACT II program – Vigonza, funded by Vigonza Development SPA.

•2021-2022: Investigation on the municipal solid waste landfill of the city of Terni, within the landfill mining project, funded by the Municipality of Terni

- 2021-2022: Investigation on the quality of waste at the special waste landfill located in Sordana, funded by ECOSORDANA
- 2022-2026: Part of the University of Padua working group for activities 5 and 6, spoke 7, PNRR-CN5 National Center on Biodiversity project. Projects on "Biodiversity and Business" and "Waste and Health"
- 2022-2026: Head of the Waste End project, funded by PNRR-PE11 MICS-Made in Italy Circular and Sustainable, spoke 4
- 2024-2025: Head of the SARTI-Industrial Symbiosis Recycling Textiles Together project, with partners Marzotto, Bottega Veneta, Ambiente srl, SIGGI, IUAV, funded by the Veneto Region with funds
- 2023-2026: Project "Treatment and recovery of materials from end-of-life vehicle shredding processes - car fluff," funded by MASE - Ministry of Ecological Transition
- 2023-2024: Hydrogen and methane production with EnzyVeba consortium, project funded by MARCOPOLO Engineering
- 2023-2024: Project on the study of metallic materials currently used and identification of potential alternatives and analysis of innovative production techniques in the eyewear sector with UNISMAST, funded by KERING spa
- 2023-2025: MICRO-Biofuel project with UNIMPRESA funds, University of Padua
- 2022-2027: CO-Coordinator of the UNIPD units in the TEAPOTS project - agriculTurE wAste PyrOlysis and Thermocomposting for renewable energy in Sustainable agri-food sector – funds HORIZON Call: CL5-2022-D3-02
- 2025-2027: Partner of the project *CERCHIO – Circular Economy for Retail-Consumer-Horeca Integrated and Optimized*, funded by MIMIT
- 2025-2026: Leading the research team of the research project "Aliens in the Lagoon, microplastics and other foreigner contaminants in the Venice lagoon", funded by CHANEL

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

