

Giovanna Pesante

 Verona, Italy

 Mestre, Italy, 6th of April 1973

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Education

- 2018 **PhD in Biology**. Centre for Novel Agricultural Products (CNAP), Department of Biology, University of York, United Kingdom.
- 2014 **Master in BioScience Technology**. Department of Biology, University of York, United Kingdom.
- 2010 **Foundation Degree in Paramedic Science**. School of Health and Social Care, University of Teesside, Middlesbrough, United Kingdom.
- 1999 **BSc in Biological Science, specialisation in Ecology (5 years)**. Università degli Studi di Milano, Italy.
- 1992 **Secondary Graduation, Classical Education (5 years)**. Liceo Statale S. Maffei, Verona, Italy.

Languages

Italian: native speaker

English: fluent

Spanish, French and Greek: basic

Work experiences

- Jul 2023 - present
Postdoctoral Researcher
- LabICAB**, University of Verona, Department of Biotechnology, Verona, Italy
Horizon 2022 Project AGRILLOOP: high-value products from agricultural residues through sustainable chains:
- participation in the organisation and the administration of WP4;
 - production of microbial proteins and PHAs for feed destined to the aquaculture sector.
- Jan 2023 - Jun 2023
Postdoctoral Researcher
- LabICAB**, University of Verona, Department of Biotechnology, Verona, Italy
Life Project 2018 CIRCforBIO: a circular economy system for multi-source biomass conversion to added value products:
- production of caproic acid from short chain fatty acid obtained from effluents of anaerobic digestion processes of agricultural residues.
- Jan 2021 - Dec 2022
Postdoctoral Researcher
- LabICAB**, University of Verona, Department of Biotechnology, Verona, Italy
Waste valorisation into new products for the chemical and food industry:
- production of microbial proteins for aquaculture from industrial and agricultural residues;
 - valorisation of wastes into bioplastics and protein hydrolysates to be used as biostimulants in agriculture.

- Apr 2019 - Dec 2020
Research Associate
- Biome Bioplastics**, Southampton & University of York, United Kingdom.
Project Horizon 2020 GENIALG: GENetic diversity exploitation for Innovative macro-ALGal biorefinery:
- enzymatic and chemical-physical treatments for the extraction of acrylic acid from macroalgae;
 - engineering of a microbial chassis with the biosynthetic pathway for acrylic acid of algae, for the sustainable production of AA;
 - PHAs from macroalgae: fermentation of PHAs producing bacteria using seaweeds as renewable biomass.
- Oct 2018 - Mar 2019
Postdoctoral Researcher
- Centre for Novel Agricultural Products**, University of York, United Kingdom
Project UKRI Learning from Marine Wood Borers: enzymes and mechanisms of lignocellulose digestion:
- heterologous expression of bacterial & eukaryotic enzymes for wood digestion;
 - characterisation of recombinant enzymes.
- Oct 2014 - Sept 2018
PhD student
- Centre for Novel Agricultural Products**, University of York, United Kingdom
Project UKRI Learning from Marine Wood Borers: enzymes and mechanisms of lignocellulose digestion.
- physiology and enzymology of lignocellulose digestion in the shipworm *Lyrodus pedicellatus*;
 - analysis of the shipworm's transcriptome and proteome;
 - microscopic studies for the study of teredinids' physiology.
- Maj 2017 - Aug 2017
PhD internship
- Biorenewables Development Centre**, Dunnington, York, United Kingdom.
Pre-treatment effects on biogas yield for anaerobic digestion: a comparison between microwave and conventional thermal hydrolysis.
- Apr 2014 - Sept 2014
Master internship
- Food and Environment Research Agency (FERA)**, York, United Kingdom.
Fusion protein design and production for the development of novel bio-pesticides from spider-derived venoms.
- Jan 2009 - Sept 2014
Paramedic
- Yorkshire Ambulance Service**, Hull and York, United Kingdom.
Emergency medical care on ambulances and rapid vehicles.
- Sept 2000 - Dec 2008
Marine Biologist
- Mar 2006 - Dec 2008. **Cardigan Bay Monitoring Officer.** *Monitoring of marine mammal populations.* Sea Watch Foundation, Wales, UK.
 - Jul 2005 - Feb 2006. **First Researcher.** *Monitoring of cetacean's migratory patterns through the Messina Strait.* Tethys Research Institute, Messina, Italy.
 - 27 Jun - 17 Jul 2005. **Researcher.** *Small Cetaceans of the European Atlantic and North Sea.* St. Andrews University, Scotland, UK.
 - 1999 - 2004. **Research Assistant.** *Ionian Dolphin Project.* Tethys Research Institute, Kalamos, Greece.
 - Dec 2003 - Jan 2004. **Research Assistant.** *Elephant Seals Project.* Point Reyes Bird Observatory, Farallon Islands, California, USA
 - 2003 - 1997. **First Researcher and Research Assistant.** *Mediterranean Fin Whale Project.* Tethys Research Institute, San Remo, Italy.
 - 29 Aug - 3 Sep 2003. **Researcher.** *Sirena 03.* NATO-SACLANTCEN, La Spezia, Italy.
 - Sep 2000 - Oct 2001. **First Researcher.** *Interactions between dolphins & artisanal fishery.* ICRAM & Tethys Research Institute, Sardegna, Italy.

Scientific courses and qualifications

- 2016 **Confocal microscopy theoretical & practical course.** Technology Facility, University of York, UK.
- 2014 **Bioinformatics theoretical & practical course.** Technology Facility, University of York, UK.
- 2007 **Distance sampling workshop.** Centre for Research into Ecological and Environmental Modelling, University of St. Andrews, Scotland, UK.
- 2004 **Arcview GIS 8.3 theoretical & practical course.** 40 hours. Politecnico di Milano, Italy.
- 2002 **Scientific diving theoretical & practical course.** International School for Scientific Diving, Cavo, Elba Island, Italy.

Laboratory skills

- Preparation of reagents and media for the growth of microorganisms
- Aseptic and microbiological techniques
- Planning and undertaking of controlled experiments
- Quantitative and qualitative analysis
- Data collection and recording
- Utilisation and maintenance of main laboratory equipment (autoclaves, microscopes, spectrophotometers, pH meters, AKTA, HPLC, GC, centrifuges, titrators...)
- Writing of report, reviews, summaries and lab books
- Knowledge of main safety protocols and of use of PPE

Molecular biology, microbiology and chemistry skills

- PCR, RT-PCR, primers design, cloning
- Extraction, purification, quantification and sequencing of DNA and RNA
- Traditional and molecular techniques for the identification of microorganisms
- Proteins and DNA electrophoresis, western blotting
- Heterologous protein production
- Extraction of proteins from tissues and bacterial pellets, purification and quantification
- Microscopy and spectrophotometry
- Analysis of proteomes and transcriptomes

Peer-reviewed publications

Pesante, G., Forestier, E., Langer, S., Danby, A., Angus, J., Gronnow, M., Bennet, J.P., Larson, T.R. and Tonon, T. 2023. Acrylic acid and DMSP lyases in the green algae *Ulva*. *Algal Research*, 103176.

Bastianelli, C., **Pesante, G.**, Ambrosini, S., Zamboni, A. and Frison, N. 2023. Upcycling of PHA-producing bacteria for biostimulants production and polyhydroxyalkanoates recovery. *Science of the Total Environment*, 888:164238.

Bolzonella, D., Bertasini, D., Lo Coco, R., Menini, M. Rizzioli, F., Zuliani, A., Battista, F., Frison, N., Jelic, A. and **Pesante, G.** 2023. Toward the transition of agricultural anaerobic digesters into multiproduct biorefineries. *Processes*, 11(2):415.

Pesante G. and Frison N. 2023. Recovery of bio-based products from PHA-rich biomass obtained from biowaste: a review. *Bioresource Technology Reports*, 101345.

Pesante, G., Zuliani, A., Cannone, E., Greco, F., Tesoriero, C., Vettori, A., and Frison, N. 2022. Biological conversion of agricultural residues into microbial proteins for aquaculture using PHA-producing mixed microbial cultures. *Journal of Cleaner Production*, 378:134554.

Critelli, P., **Pesante, G.**, Lupinelli, S., Modesti, M., Zanatta, S., Battista, F., Bolzonella, D. and Frison, N. 2022. Production and characterisation of PHAs by pure culture using protein hydrolysates as sole carbon source. *Environmental Technology & Innovation*, 28:102919.

Pesante, G., Zuliani, A., Bolzonella, D. and Frison, N. 2022. Biological conversion of agricultural wastes into microbial proteins for aquaculture feed. *Chemical Engineering Transactions*, 92:391-6.

Pesante, G., Sabbadin F., Elias L., Steele-King C., Shipway J.R., Dowle A.A., Li Y., Busse-Wicher M., Dupree P., Besser K., Cragg S.M., Bruce, N.C. and McQueen-Mason, S.J. 2021. Characterisation of the enzyme transport path between shipworms and their bacterial symbionts. *BMC biology*, 19(1):1-8.

Besser, K., Malyon, G., Eborall, W., Paro da Cunha, G., Filgueiras, J., Dowle, A., Cruz-Garcia, L., Page, S., Dupree, R., Kern, M., Gomez, L., Li, Y., Elias, L., Sabbadin, F., Mohamad, S., **Pesante, G.**, Steele-King, C., deAzevedo, E., Polikarpov, I., Dupree, P., Cragg, S., Bruce, N. and McQueen-Mason, S. 2018. Hemocyanin facilitates lignocellulose digestion by wood-boring marine crustaceans. *Nature Communications*. 9(1):1-4.

Sabbadin, F., **Pesante, G.**, Elias, L., Besser, K., Li, Y., Steele-King, C., Stark, M., Rathbone, D.A., Dowle, A.A., Bates, R. and Shipway, J.R. 2018. Uncovering the molecular mechanisms of lignocellulose digestion in shipworms. *Biotechnology for biofuels*, 11(1):59.

Sabbadin, F., Hemsworth, G.R., Ciano, L., Henrissat, B., Dupree, P., Tryfona, T., Marques, R.D., Sweeney, S., Besser, K., Elias, L., **Pesante, G.** et al. 2018. An ancient family of lytic polysaccharide monoxygenases with roles in arthropod development and biomass digestion. *Nature Communications*, 9(1):756.

Panigada, S., **Pesante, G.**, Zanardelli, M., Capoulade, F., Gannier, A. and Weinrich, M.T. 2006. Mediterranean fin whales at risk from fatal ship strikes. *Marine Pollution Bulletin*, 52:1287-1298.

O'Brien, J., Berrow, S.D., Ryan, C., McGrath, D., O'Connor, I., **Pesante, G.**, Burrows, G., Massett, N., Klötzer, V. and Whooley, P. 2009. A note on long-distance matches of bottlenose dolphins (*Tursiops truncatus*) around the Irish coast using photo-identification. *Journal of Cetacean Research and Management*, 11(1):69-74.

Non peer-reviewed publications

Pesante, G., Tesoriero, C., Vettori A. and Frison, N. 2023. Fish feed production from agricultural residues using PHA-producing pure cultures. *Proceedings of the 10th International Conference on Sustainable Solid Waste Management, Crete', Greece, 21-24 June 2023*.

Pesante, G., Bastianelli, C., Zuliani, A., Ambrosini, S., Zamboni, A. and Frison, N. 2022. Valorisation of agricultural residues into microbial proteins and protein hydrolysates by PHA-producing bacteria. *Proceedings of the 9th International Conference on Sustainable Solid Waste Management, Corfu', Greece, 15-18 June 2022*.

Pesante, G., Zuliani, A., Vettori, A., Andreolli, M., Lampis, S., Bolzonella, D. ND Frison, N. 2021. Aquaculture feed from *Thauera* sp. cells obtained from the acidogenic fermentation of agricultural wastes. *Proceedings of the 8th International Conference on Solid Waste Management, Thessaloniki, Greece, 23-26 June 2021*.

Menini, M., **Pesante, G.** Rodriguez Gamero, J.E., Bolzonella, D. and Frison, N. 2021. Dissolved CO₂ valorization by means of microbial electrolysis cell (MES) using anaerobic sludge from an agricultural digestate. *Proceedings of the 8th International Conference on Solid Waste Management, Thessaloniki, Greece, 23-26 June 2021*.

Menini, M., Lupinelli, N.S., Critelli, P., **Pesante, G.**, Battista, F. Girelli, P., Frison, N. and Bolzonella, D. 2021. Production of bio-based VFAs by acidogenic fermentation of protein hydrolysates from agriculture and tannery wastes. *Proceedings of the 8th International Conference on Solid Waste Management, Thessaloniki, Greece, 23-26 June 2021*.

Pesante, G. and Evans, P.G.H. 2010. Reproductive success of bottlenose dolphins in Welsh waters, 2001-09. *European Research on Cetaceans*, 24.

Feingold, D., Vestey, C., **Pesante, G.** and Evans, P.G.H. 2010. Relationship between the semi-resident bottlenose dolphins (*Tursiops truncatus*) population and ecological factors in Cardigan Bay, Wales. *European Research on Cetaceans*, 24.

- Pesante, G.** and Evans, P.G.H. 2008. Sea Watch Foundation Welsh bottlenose dolphin photo-identification catalogue. *Marine Monitoring Report for the Countryside Council for Wales*, No 66. 204pp.
- Pesante, G.**, Evans, P.G.H., Anderwald, P., Powell, D. and McMath, M. 2008. Connectivity of bottlenose dolphins in Wales: North Wales photo-monitoring. *Marine Monitoring Report for the Countryside Council for Wales*, No. 62. 42pp.
- Pesante, G.**, Evans, P.G.H, Baines, M. and McMath, M. 2008. Abundance and life histories parameters of bottlenose dolphins in Cardigan Bay: Monitoring 2005-07. *Marine Monitoring Report for the Countryside Council for Wales*, No 61. 75pp.
- Barba Villaescusa, L., **Pesante, G.**, Anderwald, P. and Evans, P.G.H. 2008. Distribution and habitat preference of bottlenose dolphins in Cardigan Bay, Wales. *European Research on Cetaceans*, 22.
- Beddia, L., **Pesante, G.** and Evans, P.G.H. 2008. Diurnal behaviour of bottlenose dolphins in Cardigan Bay, West Wales (2001-07). *European Research on Cetaceans*, 22.
- Evans, P.G.H. and **Pesante, G.** 2008. Bottlenose dolphins in the Cardigan Bay SAC. *Proceedings of the workshop on Marine Protected Areas, 21st Annual European Cetacean Society Conference, San Sebastian, Spain, 22-25 April 2007.*
- Pesante, G.**, Baines, M., Ugarte, F., Felce, T.H., Stone, E. and Evans, P.G.H. 2007. Residence patterns, site fidelity and population dynamics of bottlenose dolphins in Cardigan Bay, Wales. *European Research on Cetaceans*, 22.
- Pesante, G.**, Baines, M., Felce, T.H., Ugarte, F. and Evans, P.G.H. 2007. Trends of abundance of bottlenose dolphins and harbour porpoises in the Cardigan Bay Special Area of Conservation, Wales (2001-2006). *European Research on Cetaceans*, 21.
- Pesante, G.**, Baines, M. and Evans, P.G.H. 2007. Marine Mammals in Cardigan Bay, 2005-06. *Progress report for the Countryside Council for Wales*. 15pp.
- Magileviciute, E., **Pesante, G.** e Evans, P.G.H. 2007. Social networks of bottlenose dolphins in cardigan Bay, Wales. *European Research on Cetaceans*, 21.
- Panigada, S., Notarbartolo di Sciara, G., Zanardelli, M., Agazzi, S., Bendinoni, F., Costa, M. and **Pesante, G.** 2007. Habitat use and preferences of cetaceans in the Strait of Messina (Italy) through spatial modeling: implications for management. *European Research on Cetaceans*, 21.
- Panigada, S., Notarbartolo di Sciara, G., Zanardelli, M., Airoidi, S. Borsani, J.F., **Pesante, G.** and Revelli, E. 2004. Distribution and occurrence of fin whales in the Ligurian Sea between 1990-99. *European research on Cetaceans*, 15:194.
- Pesante, G.**, Politi, E. and Bearzi, G. 2003. Opportunistic sightings of Mediterranean monk seals in the Eastern Ionian Sea (1993-2002). *European Research on Cetaceans*, 17.
- Panigada, S., **Pesante, G.** Oehen, S. and Zanardelli, M. 2003. Day and night-time behaviour of fin whales in the western Ligurian Sea. *European Research on Cetaceans*, 17.
- Panigada, S., **Pesante, G.** and Zanardelli, M. 2003. Day and night-time behaviour of fin whales in the western Ligurian Sea. *Proceedings of the Conference Ocean 2003, San Diego, California, 22-26 September 2003*:466-471.
- Pesante, G.**, Collet, A., Dhermain, F., Frantzis, A., Panigada, S., Podestà, M. and Zanardelli, M. 2002. Review of collisions in the Mediterranean Sea. *European Cetacean Society Newsletter, Special Issue n° 40*:5-12.
- Panigada, S., **Pesante, G.** and Zanardelli, M. 2002. Impact of collisions between cetaceans and vessels on Mediterranean Sea populations. *Technical report for the International Fund for Animal Welfare (IFAW)*.
- Pesante, G.**, Panigada, S. and Zanardelli, M. 2002. Collisions between cetaceans and vessels: can we find solutions? *European Cetacean Society Newsletter, Special Issue n° 40*.

Politi, E., Bearzi, G., **Pesante, G.** and Barbieri, G. 2002. Resoconto delle attività di ricerca sul comportamento e l'ecologia alimentare del tursiopo (*Tursiops truncatus*) presso l'isola dell'Asinara. February 2002. *Technical report for ICRAM*, Rome.

Pesante, G., Zanardelli, M. and Panigada, S. 2000. Evidence of man-made injuries on Mediterranean fin whales. *European Research on Cetaceans*, 14: 192-193.

Conference presentations

Pesante, G., Tesoriero, C., Vettori A. and Frison, N. 2023. Fish feed production from agricultural residues using PHA-producing pure cultures. Oral presentation, 10th International Conference on Sustainable Solid Waste Management, Crete', Greece, 21-24 June 2023.

Pesante, G. Bastianelli, C., Jelik, A., Zuliani, A. and Frison, N. 2023. A biorefinery approach for the production of PHAs. Oral presentation, 2nd Greening International Conference, Valladolid, Spain, 21-23 March 2023.

Pesante, G., Zuliani, A., Bolzonella, D. and Frison, N. 2022. Biological conversion of agricultural wastes into microbial proteins for aquaculture feed. Oral presentation, GRICU, Ischia, Italy, 3-9 July 2022.

Pesante, G., Bastianelli, C., Zuliani, A., Ambrosini, S., Zamboni, A. and Frison, N. 2022. Valorisation of agricultural residues into microbial proteins and protein hydrolysates by PHA-producing bacteria. Oral presentation, 9th International Conference on Sustainable Solid Waste Management, Corfu', Greece, 15-18 June 2022.

Pesante, G., Zuliani, A., Bolzonella, D. and Frison, N. 2022. Biological conversion of agricultural wastes into microbial proteins for aquaculture feed. Oral presentation, IConBM2022, International Conference on BIOMASS, Napoli, Italy, 5-8 June 2022.

Pesante, G., Zuliani, A., Vettori, A., Andreolli, M., Lampis, S., Bolzonella, D. and Frison, N. 2021. Aquaculture feed from *Thauera* sp. cells obtained from the acidogenic fermentation of agricultural wastes. Oral presentation, 8th International Conference on Solid Waste Management, Thessaloniki, Greece, 23-26 June 2021.

Pesante, G., Sabbadin, F., Elias, L., Busse-Wicher, M., Dupree, P., Besser, K., Cragg, S., Bruce, N. and McQueen-Mason, S. 2018. Bacterial lignocellulolytic enzymes from the shipworm *Lyrodus pedicellatus*. Poster, 3rd LBNet international conference, Shrigley Hall, UK, 16-18 Maggio 2018.

Pesante, G., Sabbadin, F., Steele-King, C., Li, Y., Cragg, S., Tagliapietra, D., Bruce, N. and McQueen-Mason, S. 2017. Insights into the diversified mechanisms of wood digestion of the shipworm *Lyrodus pedicellatus* and its symbionts. Oral presentation, 52nd European Marine Biology Symposium, Piran, Slovenia, 25-29 September 2017.

Pesante, G., Sabbadin, F., Steele-King, C., Li, Y., Cragg, S., Tagliapietra, D., Bruce, N. and McQueen-Mason, S. 2017. Insights into the diversified mechanisms of wood digestion of the shipworm *Lyrodus pedicellatus*. Poster, 2nd LBNet international conference, Shrigley Hall, UK, 5-7 April 2017.

Pesante, G. "Insights into the diversified mechanisms of lignocellulose digestion in the shipworm *Lyrodus pedicellatus*". 2017. Oral presentation, Molecular Microbial Ecological group Meeting, Newcastle University, Newcastle, UK, 16-17 April 2017.

Pesante, G. "Reproductive success of bottlenose dolphins in Welsh waters, 2001-09". 2010. Oral presentation, 24th annual European Cetacean Society Conference, Stralsund, Germany, 22-24 March 2010.

Pesante, G. "Residence patterns, site fidelity and population dynamics of bottlenose dolphins in Cardigan Bay, Wales". Oral presentation, 22nd annual European Cetacean Society Conference, Egmond aan Zee, Netherlands, 10-12 March 2008.

Pesante, G., Baines, M., Ugarte, F., Felce, T.H., Stone, E. and Evans, P.G.H. 2007. Residence patterns, site fidelity and population dynamics of bottlenose dolphins in Cardigan Bay, Wales. Poster, 22nd annual Conference of the European Cetacean Society, Egmond aan Zee, Netherland.

- Pesante, G.**, Baines, M., Felce, T.H., Ugarte, F. and Evans, P.G.H. 2007. Trends of abundance of bottlenose dolphins and harbour porpoises in the Cardigan Bay Special Area of Conservation, Wales (2001-2006). Poster, *21st annual Conference of the European Cetacean Society*, San Sebastian, Spain.
- Pesante, G.**. "Behavioural ecological studies of bottlenose dolphins in Cardigan Bay, 2001-07". Presentazione orale, *Marine and Freshwater Monitoring Workshop* organized by the Countryside Council for Wales. 27 November 2007, Aberystwyth, Wales, UK.
- Pesante, G.** "Monitoring bottlenose dolphins and harbour porpoises in Cardigan Bay, 2003-06". Presentazione orale, *Marine and Freshwater Monitoring Workshop* organized by the Countryside Council for Wales. November 2006, Bangor, Wales, UK.
- Pesante, G.** "Balene e delfini del Mar Mediterraneo". Lesson for the sailing school "Guantalavela". April 2005, Milano, Italy.
- Pesante, G.** "Introduzione ai cetacei: evoluzione, classificazione, anatomia e adattamenti alla vita in mare". First lesson of the second Monographic Course on Cetacean, with Tehtys Research Institute, Istituto per gli Studi sul Mare, Verdeacqua and Acquario di Milano, Italy. November 2004.
- Pesante, G.** "Attibita' di ricerca su cetacei del Mediterraneo". Invited speaker for the Gruppo Subacque Ferrarese, Italy. April 2004.
- Pesante, G.**, Politi, E. and Bearzi, G. 2003. Opportunistic sightings of Mediterranean monk seals in the Eastern Ionian Sea (1993-2002). Poster, *17th annual Conference of the European Cetacean Society*, Las Palmas, Spain.
- Pesante, G.** "I cetacei del Mediterraneo e le tecniche di ricerca sulla balenottera comune". Invited speaker, hydrobiology course, Biology Department, University of Biological Science "Bicocca", Milano, Italy. January 2003.
- Pesante, G.** "Introduzione ai cetacei: evoluzione, classificazione, anatomia e adattamenti alla vita in mare". First lesson of the first Monographic Course on Cetacean, with Tehtys Research Institute, Istituto per gli Studi sul Mare, Verdeacqua and Acquario di Milano, Italy. January 2003.
- Pesante, G.** "I cetacei del Mediterraneo ". Invited speaker for the Societa' dei Naturalisti di Verona, Museo di Storia Naturale, Verona, Italy. November 2001.
- Pesante, G.**, Zanardelli, M. and Panigada, S. Evidence of man-made injuries on Mediterranean fin whales. Poster, *14th annual Conference of the European Cetacean Society*, Cork, Ireland. 2000.