

Curriculum vitae



Name and Surname	Concetta Gugliandolo
Address	1/D, 98123, Messina, Italy
Phone	Fixed: +390906765737
E-mail	cgugliandolo@unime.it
Nationality	Italian
Birth date	07 07 1959

CURRENT POSITION(S)

University of Messina (UNIME) Dep Chemical, Biological, Pharmaceutical and Environmental Sciences (CHIBIOFARAM)

From 30/12/2014 to date Full Professor of Ecology (UNIME)

From 2015 Director of the "Research Centre of Extreme Environments and Extremophiles" at the Dip CHIBIOFARAM (UNIME)

2016-2019 Board member of the National Interuniversity Sea Sciences Consortium (CoNISMa)

EDUCATION

-2008-2014 Researcher, University of Messina

-1992 Ph. D. in Environmental Sciences, University of Messina

-1985 Specialization in Marine Biochemistry, University of Messina

-1982 Doctoral degree, Biological Sciences, University of Messina

RESEARCH INTERESTS

Microbial Ecology, Environmental and Applied Microbiology, Geomicrobiology, Environmental Biotechnology, Marine Biotechnology

The aims include: taxonomic aspects, spatial patterns in microbial communities, relationship of microbial community structure and function, research of novel biomolecules of interest in biotechnology.

Topics:

- Microbial community distribution and diversity in aquatic environments: brackish lakes, marine coastal zone and shallow hydrothermal vents
- Microbial quality of water, sediments and shellfish
- Relationships among planktonic organisms and bacterial pathogens
- Marine bacteria producing new biomolecules of biotechnological interest

RESEARCH ACTIVITY

Her research is documented by **190** scientific paper:

- Scientific peer-reviewed international articles in Scopus/WOS **71**
- Book chapters: 5
- National and International not-indexed Articles: 20
- Articles *in extenso* in Conference proceedings: 7
- Abstract in National and International Journals: 10
- Abstract in National and International Conference proceedings 77

Publication impact

-H index: 25 (Scopus)

-N° of citations 1600

TEACHING ACTIVITY

from 2015 to date Microbial Ecology, CdL Magistrale di Biologia

from 2015 Marine Biotechnologies, CdL Magistrale in Biologia ed Ecologia dell'ambiente Marino Costiero

from 2016 Microbial Ecology and Protection of Marine Environment, CdL Triennale in Scienze Biologiche

2015-2016 Ecology, CdL Triennale in Tecniche della Prevenzione nell'ambiente e nei luoghi di lavoro

From 2013 Environmental Biotechnologies, CdL Magistrale di BIOLOGIA

2014-2015 Microbial Ecology, CdL Triennale in Scienze dell'Ambiente e della Natura

2009-2014 Geomicrobiology, CdL Magistrale in Tutela e Gestione dell'Ambiente

MEMBER OF PH.D COURSES

From 2013 to date Applied Biology and Experimental Medicine
2012-2013 Scienze Ambientali: Ambiente Marino e Risorse
2009-2012 Biologia e Biotecnologie Cellulari.

TEACHING AT FOREIGN OR INTERNATIONAL - UNIVERSITIES AND RESEARCH INSTITUTES

2017 January 14-24, Escuela de Verano "Microorganisms from Extreme Environments and their biotechnological potential" Faculty of Biological Science, Department of Microbiology, University of Concepción, Chile
2015 October 29-November 3, Lectures for graduate students of Bioremediation Laboratory and Environmental Microbiology Laboratory. Faculty of Biological Science, Department of Microbiology, University of Concepción, Chile.
2011 June Virginia Commonwealth University Richmond (USA), International Summer School "Biodiversity and Conservation", lectures on "Bioindicators and water quality" collaborative program with the University of Messina "Ecological water quality assessment of the Alcantara and James rivers using bioindicators".

SCIENTIFIC RESPONSIBLE OF RESEARCH UNIT IN NATIONAL AND INTERNATIONAL PROGRAMMES

-2018-2019 UniME-Lallemand "Antibiofilm activity of the exopolysaccharide produced by *Bacillus licheniformis* T14 against pathogenic bacteria of the respiratory tract".
-PO FEAMP SICILIA 2014/2020, Misura 2.56 Misure relative alla salute e al benessere degli animali - art. 56 del Reg. (UE) n. 508/2014, Progetto FISH PATH NET "Sviluppo di antibiotici naturali" (A.3.4)
- PNRA16_00020 "Poriferi antartici: Hot-spots di diversità Procariotica e Potenzialità biotecnologiche - P3" approvato dal Programma Nazionale di Ricerche in Antartide (Bando PNRA 5 aprile 2016, n. 651).
-PON02 2007-2013 (00451-3362185) "Innovazione tecnologica a supporto dell'incremento della produttività e della competitività dell'acquacoltura siciliana" OR3, SA 3.1.2

COMPONENT OF RESEARCH UNIT IN NATIONAL AND INTERNATIONAL PROGRAMMES

-PON2 2013-2015 "Marine Hazard (24 months) "Sviluppo di tecnologie innovative per l'identificazione, monitoraggio e mitigazione di fenomeni di contaminazione naturale e antropica", Distretto Tecnologico per l'Ambiente Marino della Sicilia
-PNRA-MIUR 2013-2015 linea A "Ecologia del permafrost a Victoria Land: passato, presente ed evoluzione futura in un contesto di Cambiamento Climatico" (UR3)
-PNRA-MIUR 2011-2013 "Studio della diversità microbica (Batteri ed Archea) nel continente antartico
- 2010-2012: Virginia Commonwealth University - University of Messina Collaboration Program "Ecological water quality assessment of the Alcantara and James rivers using bioindicators" Operative Unit Microbial Ecology: "Use of microbial community structure, dynamic and diversity as bioindicator of ecological status"
-1996-1999: MAST3-CT95-0034 European project: "Microorganisms in deep sea and marine hot springs as sources of potentially valuable chemicals"

**INVITED
PRESENTATIONS (Last 5
Years)**

2017 27-30 September 45°Congress SIM, Genova “Bacilli from shallow hydrothermal vents of Eolian Islands (Italy) and their biotechnological potential” (Invited speaker)

2015 27-November, University Concepcion, Chile, Lecture “Molecular approaches for studying microbial diversity”

**EDITORIAL BOARD
MEMBER OF SCIENTIFIC
JOURNALS**

2020 Editorial Board Member of Journal of Marine Science and Engineering, MDPI, Basel

2018-2019 Guest Editor, Special Issue: *Microbial Diversity in Extreme Environments: implications for ecological and applicative perspectives* Diversity, MDPI

2017 -International Scholarly Research Notices - ISRN Microbiology, Hindawi Publishing Corporation ISSN: 2090-7486 (Online)

2016-Chinese Journal of Biology Hindawi Publishing Corporation, Open Access

**MAJOR NATIONAL AND INTERNATIONAL
COLLABORATIONS**

Consiglio Nazionale delle Ricerche (C.N.R.), Institute of Biomolecular Chemistry (I.C.B.) Dr Barbara Nicolaus, Dr Annarita Poli; Dr Paola Di Donato

Consiglio Nazionale delle Ricerche (C.N.R.) Institute of Polar Sciences Dr Angelina Lo Giudice

Stazione Zoologica Anton Dohrn (SZN), National Institute of Biology, Department of Marine Biotechnology, Dr Carmen Rizzo

-**Università di Concepción, Cile** Department of Microbiology, Prof. Miguel Martinez, Prof. Victor Campos

-**Universidad de La Frontera** Temuco, Chile Dr. Gonzalo Tortella Fuentes.-

-**University of Applied Sciences Bonn-Rhein-Sieg, Germany** Prof. Dr. Ralf Möller, Team Leader of the Space Microbiology Research Group Professor for Space Microbiology;

-**German Aerospace Center** Institute of Aerospace Medicine Radiation Biology Linder Höhe, 51147 Köln/Cologne;

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-Member of Consorzio Nazionale Interuniversitario per le Scienze del Mare (CoNISMa)
 -Member of the Italian Society of Ecology (SIte)
 2007-2008 vice-director for the Master GaMaCoR (CoNISMa-Regione Sicilia)
 -Reviewer for the Following Journals: Cahiers de Biologie Marine, Environmental Science and Pollution Research, Marine Pollution Bulletin, Food Control, Systematic and Applied Microbiology, Current Microbiology, British Biotechnology Journal, Marine Drugs, Molecules, Microorganisms

PEER-REVIEWED ARTICLES (2020-2010)

1. RIZZO C., GUGLIANDOLO C., LO GIUDICE A. (2020) Exploring Mediterranean and Arctic environments as a novel source of bacteria producing antibacterial compounds to be applied in aquaculture. *Applied Sciences*, 10, 4006; doi:10.3390/app10114006
2. LO GIUDICE A., GUGLIANDOLO C. (2020) A Special Issue on Microorganisms from Extreme Environments in Memory of Luigi Michaud (1974–2014). *Diversity*, 12, 2; doi:10.3390/d12010002
3. CACCAMO M.T., GUGLIANDOLO C., VINCENZO ZAMMUTO, MAGAZÙ S (2020) Thermal properties of an exopolysaccharide produced by a marine thermotolerant *Bacillus licheniformis* by ATR-FTIR spectroscopy. *International Journal of Biological Macromolecules*, 145:77–83
4. ZAMMUTO V., GUGLIANDOLO C. (2019) Resistance to high temperatures of spores from bacilli of shallow hydrothermal vents origins. *Atti Accademia Peloritana dei Pericolanti, Classe di Scienze Fisiche, Matematiche e Naturali*, Vol. 97, No. S2, A28 DOI: 10.1478/AAPP.97S2A28
5. TAPIA C, LÓPEZ B, ASTUYA A, BECERRA J, GUGLIANDOLO C, PARRA B, MARTÍNEZ M (2019). Antiproliferative activity of carotenoid pigments produced by extremophile bacteria. *Natural Product Research*, p. 1-4, doi: 10.1080/14786419.2019.1698574
6. RIZZO MG, NICOLÒ MS, FRANCO D, DE PLANO LM, CHINES V, MOSCATO F, CREA G, GUGLIANDOLO C, GUGLIELMINO SPP (2019) Glutamine-induced filamentous cells of *Pseudomonas mediterranea* CFBP-5447T as producers of PHAs. *Applied Microbiology and Biotechnology* 103: 9057-9066, doi: 10.1007/s00253-019-10144-2
7. GUGLIANDOLO C, MAUGERI TL (2019) Phylogenetic diversity of Archaea in shallow hydrothermal vents of Eolian Islands, Italy. *Diversity*, 11,156, doi: 10.3390/d11090156
8. PAPALE M, LO GIUDICE A, CONTE A, RIZZO C, RAPPAZZO AC, MAIMONE G, CARUSO G, LA FERLA R, AZZARO M, GUGLIANDOLO C, PARANHOS R, CABRAL AS, SPICA RV, GUGLIELMIN M (2019) Microbial assemblages in pressurized Antarctic brine pockets (Tarn flat, northern Victoria land): A hotspot of biodiversity and activity. *Microorganisms* 7,333, doi: 10.3390/microorganisms7090333
9. ESPINOSA RUIZ C, MORGHESI M, RENDA G, GUGLIANDOLO C, ESTEBAN MA, SANTULLI A MESSINA CM (2019) Effects of BDE-47 exposure on immune-related parameters of *Mytilus galloprovincialis*. *Aquatic Toxicology*, 215, doi.org/10.1016/j.aquatox.2019.105266
10. SCALA A, PIPERNO A, HADA A, ASTILEAN S, VULPOI A, GINESTRA G, MARINO A, NOSTRO A, ZAMMUTO V, GUGLIANDOLO C (2019) Marine bacterial exopolymers-mediated green synthesis of noble metal nanoparticles with antimicrobial properties *Polymers*, 11, 1157; doi.org/10.3390/polym11071157 (Special Issue Polymeric Nanoparticles for Drug Delivery and Diagnostics)
11. ZAMMUTO V, FUCHS FM, FIEBRANDT M, STAPELMANN K, ULRICH

- NJ., MAUGERI TL, PUKALL R, GUGLIANDOLO C, MOELLER R (2018) Comparing spore resistance of *Bacillus* strains isolated from hydrothermal vents and spacecraft assembly facilities to environmental stressors and decontamination treatments. *Astrobiology*, 18: 1425-1434, DOI: 10.1089/ast.2017.1715
12. LEON CG, MORAGA R, VALENZUELA C, GUGLIANDOLO C, LO GIUDICE A, PAPALE M, VILO C, DONG Q, SMITH C T, ROSSELLO-MORA R, YAÑEZ J, CAMPOS VL (2018) Effect of the natural arsenic gradient on the diversity and arsenic resistance of bacterial communities of the sediments of Camarones River (Atacama Desert, Chile) *PlosOne* 13(5):e0195080, doi.org/10.1371/journal.pone.0195080
13. CACCAMO MT, ZAMMUTO V, GUGLIANDOLO C, MADELEINE-PERDRILLAT C, SPANÒ A, MAGAZÙ S. (2018) Thermal restraint of a bacterial exopolysaccharide of shallow vent origin. *International Journal of Biological Macromolecules*, 114: 649-655, DOI: doi.org/10.1016/j.ijbiomac.2018.03.160
14. RIZZO C, GENOVESE G, MORABITO M, FAGGIO C, PAGANO M, SPANÒ A, ZAMMUTO V, ARMELI MINICANTE S, MANGHISI A, CIGALA RM, CREA F, MARINO F, GUGLIANDOLO C (2017) Potential antibacterial activity of marine macroalgae against pathogens relevant for aquaculture and human health. *Journal of Pure and Applied Microbiology*, 11: 1695-1706, DOI: 10.22207/JPAM.11.4.07
15. MARINO-MERLO, F., PAPAIAANNI, E., MAUGERI, T.L., ZAMMUTO, V., SPANÒ, A. NICOLAUS, B., POLI, A., DI DONATO, P., MOSCA, C. MASTINO, A. GUGLIANDOLO C. (2017) Anti-herpes simplex virus 1 and immunomodulatory activities of a poly- γ - glutamic acid from *Bacillus horneckiae* strain APA of shallow vent origin. *Applied Microbiology and Biotechnology* 101, 7487-7496, DOI:10.1007/s00253-017-8472-5
16. AGUAYO P., GONZÁLEZ P., CAMPOS V., MAUGERI T.L., PAPALE M., GUGLIANDOLO C., MARTINEZ M.A. (2017) Comparison of prokaryotic diversity in cold, oligotrophic remote lakes of Chilean Patagonia. *Current Microbiology*, 74:598-613, DOI: 10.1007/s00284-017-1209-y
17. MARINO F., DI CARO G., GUGLIANDOLO C., SPANÒ A., FAGGIO C., GENOVESE G., MORABITO M., RUSSO A., BARRECA D., FAZIO F., SANTULLI A. (2016) Preliminary study on the *in vitro* and *in vivo* effects of *Asparagopsis taxiformis* bioactive phycoderivates on teleosts *Front Physiol.*; 7: 459, DOI: 10.3389/fphys.2016.00459
18. SPANO A., LAGANÀ P., VISALLI G., MAUGERI T.L., GUGLIANDOLO C. (2016) In vitro antibiofilm activity of an exopolysaccharide from the marine thermophilic *Bacillus licheniformis* T14. *Current Microbiology* 72:518–528, DOI: 10.1007/s00284-015-0981-9
19. GUGLIANDOLO, C., MICHAUD, L., LO GIUDICE, A., LENTINI, V., ROCHERA, C., CAMACHO, A., MAUGERI, T.L. (2016) Prokaryotic community in lacustrine sediments of Byers Peninsula (Livingston Island, Maritime Antarctica. *Microbial Ecology*, 71:387–400. DOI: 10.1007/s00248-015-0666-8
20. POLI A, GUGLIANDOLO C, SPANÒ A, TAURISANO V, DI DONATO P, MAUGERI TL, NICOLAUS B ARENA A (2015) Poly- γ -Glutamic Acid from *Bacillus horneckiae* strain APA of shallow marine vent origin with antiviral and immunomodulatory effects against Herpes Simplex Virus Type-2. *Journal of Marine Science Research & Development*, 5:3 <http://dx.doi.org/10.4172/2155-9910.1000173>
21. GUGLIANDOLO C, SPANÒ A., MAUGERI TL POLI A, ARENA A, NICOLAUS B (2015) Role of bacterial exopolysaccharides as agents in counteracting immune disorders induced by Herpes Virus. *Microorganisms* 3:464-483, www.mdpi.com/journal/microorganisms, DOI:10.3390/microorganisms3030464

22. GUGLIANDOLO C, LENTINI V., BUNK B., OVERMANN J., ITALIANO F., MAUGERI T.L. (2015) Changes in prokaryotic community composition accompanying a pronounced temperature shift of a shallow marine thermal brine pool (Panarea Island, Italy). *Extremophiles*, doi: 10.1007/s00792-015-0737-2
23. MANGANARO, A., SANFILIPPO, M., FAGGIO, C., GENOVESE, G., GUGLIANDOLO, C., MAUGERI, T.L., MORABITO, M., TRISCHITTA, F., SANTULLI, A. (2015) INNOVAQUA project Technological innovation for the improvement of productivity and competitiveness of Sicilian aquaculture: Aspects of experimental biology *Journal of Biological Research*, 88: 96-97
24. LENTINI V., GUGLIANDOLO C, BUNK B., OVERMANN J., MAUGERI T.L. (2014) Diversity of prokaryotic community at a shallow marine hydrothermal site elucidated by Illumina sequencing technology *Current Microbiology*, 69: 457-466. doi 10.1007/s00284-014-0609-5
25. GUGLIANDOLO C., SPANÒ A., LENTINI V., ARENA A. MAUGERI T.L. (2014) Antiviral and immunomodulatory effects of a novel bacterial exopolysaccharide of shallow marine vent origin. *Journal of Applied Microbiology*, 116: 1028-1034, doi:10.1111/jam.12422
26. GUGLIELMO L., F. AZZARO, C. BAVIERA, A. BERGAMASCO, S.N. BISSETT, C. BRUGNANO, G. CARUSO, F. DECEMBRINI, A.L. GAREY, A. GRANATA, C., GUGLIANDOLO et al. (2014) Multidisciplinary ecological assessment of the Alcantara River (Sicily, Italy) using bioindicators. *Marine and Freshwater Research*, 65: 283-305 <http://dx.doi.org/10.1071/MF13044>
27. MAUGERI T.L., GUGLIANDOLO C., LENTINI V. (2013) Diversity of prokaryotes at a shallow submarine vent by high-throughput Illumina sequencing. *Atti della Accademia Peloritana dei Pericolanti Classe di Scienze Fisiche, Matematiche e Naturali*, vol. 91 A1 DOI: 10.1478/AAPP.912A1
28. MAUGERI T.L., LENTINI V., SPANÒ A., GUGLIANDOLO C. (2013) Abundance and diversity of picocyanobacteria in shallow hydrothermal vents of Panarea Island (Italy). *Geomicrobiology Journal*, 30:93–99, doi: 10.1080/01490451.2011.653088
29. SPANÒ A., GUGLIANDOLO C., LENTINI V., MAUGERI T.L., ANZELMO G., POLI A., NICOLAUS B. (2013) A novel EPS-producing strain of *Bacillus licheniformis* isolated from a shallow vent off Panarea Island (Italy). *Current Microbiology*, 67:21–29, doi: 10.1007/s00284-013-0327-4
30. GENOVESE G., FAGGIO C., GUGLIANDOLO C., TORRE A., SPANÒ A., MORABITO M., MAUGERI T.L. (2012) In vitro evaluation of antibacterial activity of *Asparagopsis taxiformis* from the Straits of Messina against pathogens relevant in aquaculture. *Marine Environmental Research*, 73, 1-6, doi: 10.1016/j.marenvres.2011.10.002
31. LENTINI V., GUGLIANDOLO C., MAUGERI T.L. (2012) Vertical distribution of *Archaea* and *Bacteria* in a meromictic Lake as determined by Fluorescent In Situ Hybridization. *Current Microbiology*, 64:66-74, doi: 10.1007/s00284-011-0028-9
32. GUGLIANDOLO C., LENTINI V., SPANÒ A., MAUGERI T.L. (2012) New bacilli from shallow hydrothermal vents of Panarea Island (Italy) and their biotechnological potential. *Journal of Applied Microbiology*, 112:1102-1112, doi: 10.1111/j.1365-2672.2012.05272.x,
33. GUGLIANDOLO C., LENTINI V., MAUGERI T.L. (2011) Distribution and diversity of *Bacteria* in a saline meromictic lake as determined by PCR-DGGE of 16S rRNA gene fragments. *Current Microbiology*, 62: 159-166, doi: 10.1007/s00284-010-9688-0
34. GUGLIANDOLO C., LENTINI V., SPANÒ A., MAUGERI T.L. (2011) Conventional and molecular methods to detect bacterial pathogens in mussels. *Letters in Applied Microbiology*, 52:15-21, doi:10.1111/j.1472-765X.2010.02959.x

35. MAUGERI T.L., LENTINI V., GUGLIANDOLO C., COUSIN S., STACKEBRANDT E. (2010) Microbial diversity at a hot, shallow-sea hydrothermal vent in the Southern Tyrrhenian Sea (Italy). *Geomicrobiology Journal*, vol. 27, p. 380-390, doi:10.1080/01490450903451518
36. MAUGERI TL., BIANCONI G., CANGANELLA F., DANOVARO R., GUGLIANDOLO C., ITALIANO F., LENTINI V., MANINI E., NICOLAUS B. (2010) Shallow hydrothermal vents in the southern Tyrrhenian Sea. *Chemistry and Ecology*, vol. 26, p. 285-298, doi: 10.1080/02757541003693250
37. FERA M.T., GUGLIANDOLO C., LENTINI V., FAVALORO A., BONANNO D., LA CAMERA E., MAUGERI T.L. (2010) Specific detection of *Arcobacter* spp. in estuarine waters of Southern Italy by PCR and fluorescent in situ hybridization. *Letters in Applied Microbiology*, vol. 50, p. 65-70, doi: 10.1111/j.1472-765X.2009.02767.x
38. MAUGERI TL, LENTINI V, CAMPANA A, SPANO' A, GUGLIANDOLO C (2010) Luminescent bacteria from a brackish environment. *Journal of Biotechnology*, 150: S224-S224 DOI: 10.1016/j.jbiotec.2010.09.055

Messina, 02/09/2020

In faith,

