

## CURRICULUM VITAE ET STUDIORUM

DI DANIELA CACCAMO

Born in Messina on 31/08/1972, and living in Messina, Street Scite n. 8, postcode 98124.

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### ACTUAL POSITION

- Associate Professor (from 30/11/2016) of Clinical Biochemistry and Clinical Molecular Biology (BIO/12) at the Department of Biomedical Sciences, Dental Sciences and Morpho-Functional Imaging (BIOMORF) of University of Messina.

- Biologist at the Clinical Biochemistry Unit of Polyclinic Hospital University "G. Martino ", Messina.

### PROFESSIONAL EDUCATION AND TRAINING

- ♣ July 1990: High School Diploma with 60/60 marks.

- ♣ July-October 1993: internship in the Microbiology laboratories of the Institut Pasteur in Lille (France), funded by a COMETT grant.

- ♣ October-November 1994 / July 1995: internship in the Genetics laboratories of the Department of Animal Biology and Genetics (DBAG) of the University of Florence.

- ♣ September 1995: Degree in Biological Sciences at the University of Messina with 110/110 cum laude.

- ♣ March-July 1996: internship in the Genetics laboratories of the DBAG in Florence with the financial support of a grant from the Bonino-Pulejo Foundation.

- ♣ November 1996: qualification to the profession of Biologist.

- ♣ November 1996: winner of a competition for a PhD scholarship in "Environmental Sciences: Marine Environment and Resources" at the University of Messina.

- ♣ May-July 1997: internship in the Genetics laboratories of the DBAG in Florence as part of the experimental activity concerning the PhD thesis.

- ♣ April-July 1998: internship in the Molecular Biology laboratories of the Deutsche Sammlung von Mikroorganismen und Zellkulturen in Braunschweig (Germany).

- ♣ January 1999: achievement of Doctor of Philosophy degree (PhD).

- ♣ May 1999 / April 2001: Post-Doc fellow at the University of Messina.

- ♣ May 2001 / October 2005: Research fellow (4 years) at the University of Messina.

- ♣ June-October 2006: research contractor on the project COFIN 2004-06.

- ♣ October 2006: winner of a call for one position as Researcher of Clinical Biochemistry and Clinical Molecular Biology (SSD BIO/12) at the University of Messina.

- ♣ 29/12/2006: employment as Researcher at the Department of Biochemical, Physiological and Nutrition Sciences of the University of Messina

- ♣ 01/01/2007: employment as Biologist Manager at the Clinical Biochemistry Unit of the Polyclinic Hospital University "G. Martino" of Messina.

- ♣ August-November 2007: visiting researcher at the Molecular and Tissue Biology Laboratories of the School of Life & Health Science of Aston University in Birmingham (UK).

- ♣ 29/12/2009: confirmed in the role of Researcher.

- ♣ 16/06/2014: achievement of eligibility for the role of Associate Professor of Biochemistry as well as Clinical Biochemistry and Clinical Molecular Biology (SC 05 / E1-SSD BIO/10 + BIO/12) in the 2012 round of the National Scientific Qualification procedure.

♣ 13/10/2016: winner of a call for one position as Associate Professor of Clinical Biochemistry and Clinical Molecular Biochemistry (SC05/E3 - SSD BIO/12) at the Department of Biomedical Sciences, Dental Sciences and Morpho-Functional Imaging of the University of Messina.

♣ 05/10/2018: achievement of eligibility for the role of Full Professor of Clinical Biochemistry and Clinical Molecular Biochemistry (SC05/E3 - SSD BIO/12) in the 2016 round of the National Scientific Qualification procedure.

♣ 26/05/2021: called in the role of Full Professor of Clinical Biochemistry and Clinical Molecular Biochemistry (SC05/E3 - SSD BIO/12) at the Department of Biomedical Sciences, Dental Sciences and Morpho-Functional Imaging of the University of Messina.

## SCIENTIFIC ACTIVITY

From 1995 to 2001, the research activity was focused on the study of Systematics of environmental bacteria and the exploitation for biotechnological purposes of molecules produced by bacteria from extreme environments.

In 2000 she was Principal Investigator of a one-year Young Researchers - Research Project funded by the University of Messina.

Starting from 1999, the results obtained in this period were published in international journals indexed with referee (11 papers) and divulged at national and international conferences (2 oral communications, 23 poster).

From 2002 to date, research has been focused on issues of Clinical Biochemistry and Clinical Molecular Biology, with the aim of identifying new biomarkers of various chronic pathological states, characterized by inflammatory and oxidative stress. For this purpose, an experimental approach was carried out by investigations using in vitro, in vivo and ex-vivo models, and by case-control studies.

In 2003 she was Principal Investigator of a one-year Young Researchers - Research Project funded by the University of Messina.

The research activity was paused, due to maternity leave, from July to December 2003.

In 2005 she was awarded the FEBS (Federation of European Biochemical Societies) -Young Researcher scholarship for deserving young researchers at the 8th International Conference on Protein Crosslinking and Transglutaminases (PCL8) in Lubeck (Germany).

In 2006 she was awarded the 2006 Young Researchers Award of the University of Messina.

In 2007 and 2008 she worked as a consultant for the nutraceutical company NATHURA (Scientific Nutrition) to carry out the determination of growth factors in the Colostrum gel product.

In 2008 she worked as consultant for the pharmaceutical company EISAI to carry out the in vitro study "*Zonisamide protective effect against homocysteine-induced toxicity: possible involvement of intracellular calcium homeostasis and heat shock proteins*".

In 2009 she was Principal Investigator of a one-year Research Project funded by the University of Messina.

The research activity was paused, due to maternity leave, from February to August 2009 and in March 2010.

In 2010 she was awarded a grant by the Gordon Research Conference RC Scientific Committee, as financial support to young foreign researchers deserving for participation in the Gordon Research Conference "Transglutaminases in Human Disease Processes" (18-23 July) at Davidson College in Davidson, North Carolina (US).

She participated as Principal Investigator of three-years research proposals applying for funding in various national calls of the Ministry of University and Research and of the Ministry of Health: FIRB-Futuro in Ricerca (2008, 2010, 2012), Targeted Research Young Researchers (2010, 2011), and PRIN (2017-18). The projects were positively evaluated but not included in the ranking of fundable proposals.

She participated as Associated Investigator, coordinator of UniME Research Unit, of three-years research proposals applying for funding in the international calls Horizon 2020 - FETOPEN (2014,

2015 RIA), and ANSES Recherche & Veille (2014). The proposals were positively evaluated but did not reach the minimum score for being funded.

In 2017 she received the national funding FFABR (Fund for the financing of basic research activities, assigned by ministerial announcement).

In 2020 she received the FFABR UniME.

The results of the research conducted from 2002 onwards have been published in international journals indexed with anonymous reviewers (96 papers) and one book chapter, as well as divulged at national and international conferences (29 oral communications, 89 poster).

At the date of the C.V. drafting the citational impact of the publications was the following: total IF = 318.02; Mean IF = 3.312; total citations: 2417; average citations / work: 22.8; average citations / year: 120.85; h-index: 31).

Scientific production was positively evaluated according to the VQR 2004-2010 (score 0.8 Good) and 2011-2014 (score 0.7 High).

The complete list of full publications is available at the links

<https://pubmed.ncbi.nlm.nih.gov/?term=Caccamo+D&sort=date>

<https://www.scopus.com/authid/detail.uri?authorId=7003436448>

<https://iris.unime.it/mydspace>

The item relating to the book chapter and the list of congress communications are shown at the bottom of the CV.

She was an ordinary member of the Italian Society of Biochemistry and Molecular Biology (SIB) until 2010, and is a member of the Italian Society of Clinical Biochemistry (SIBioC) since 2007.

#### ***Organization of seminars, workshops, conferences and ECM courses***

In 2005 she was member of the Organizing Committee of two national congresses, and of two ECM courses in 2006 and 2008.

In June 2015 she organized the workshop "Hypersensitivity diseases: an escalating epidemic of allergies, food intolerances and chemical sensitivity" at the Accademia dei Pericolanti Room of the University of Messina. As part of the workshop, involving researchers, national experts, as well as local teachers, doctors and nutritionists, the book "Multiple chemical sensitivity: diagnosis, therapies and recognition" by the scientific journalist Francesca Romana Orlando was also presented.

In April 2016 she organized the scientific workshops "The interactome of transglutaminase 2 in Chronic kidney disease (CKD)", and "A matrix of life and death. A dialogue on the extracellular matrix ", for students, graduate students, postgraduates and researchers of the University of Messina, and educational seminars in English, entitled " DNA sequencing from Sanger to Next generation ", and " A step into gene editing: the CRISPR-Cas9 revolution", for students of the three-year and Master's degree courses of School of Medicine and Surgery. All workshops and seminars were held by Prof. E. Verderio-Edwards from Nottingham Trent University in Nottingham.

In May 2019, she organized and was Scientific Head of the Conference (n. 11 ECM) "Central sensitization syndromes: Multiple Chemical Sensitivity and Fibromyalgia" at the Congress Center of the Polyclinic Hospital University in Messina.

In October 2020 she organized and was Scientific Head of the Conference (n. 10 ECM) "The microbiota in the redox regulation of inflammatory processes: diagnostic and therapeutic perspectives in Central Sensitization Syndromes" at the Congress Center of the Polyclinic Hospital University in Messina.

#### ***Peer-review of research projects***

She was Referee for Future Projects in Research 2012 call and 2013 call.

She is Referee for VQR process, and for Research Projects calls of the universities of Catania and Roma Tor Vergata.

She has been enrolled in the MIUR Register of Reviewers since 2012, and she has been enrolled in REPRISE (Register of Expert Peer Reviewers for Italian Scientific Evaluation) since 2015 for the evaluation of research projects presented on national funding calls.

### ***Editorial activity***

She has carried out and still carries out peer-review activities for the following indexed international journals: Alzheimer's and Dementia, Analytical & Bioanalytical Chemistry, Antioxidants, Applications in Clinical Genetics, Biomedicine, BMC Medical Genetics, BMJ Open, Cells, Clinica Chimica Acta, Current Medical Research & Opinion, Diseases, Frontiers in Molecular Neuroscience, Future Drugs Ltd., Genes, International Journal Biochemistry Research Review, International Journal Environmental Medicine Public Health, International Journal Molecular Sciences, International Journal Neuroscience, Journal Sport Sciences, Journal Neurochemistry, Mediators of Inflammation, Molecules, Neurodegenerative disease and treatment, Neuromolecular medicine, Neuropsychiatric disease treatment, Neurotoxicity Research, Oncotargets and Therapy, Oxidative Medicine and Cellular Longevity, Postgraduate Medicine, The Tohoku Journal of Experimental Medicine.

She has been Guest Editor of Special Issue "*Innovative approaches in environmental medicine: redox/detoxification biomarkers in environmental intolerances*" (2013) for the journal Oxidative Medicine and Cellular Longevity (I.F. 4.098), and of Special Issues "*Environmental Sensitivity Illnesses: Mechanisms and Molecular Signatures*" v. 1.0 (2019-20) and v. 2.0 (2020-21) for the journal International Journal of Molecular Sciences (I.F. 4,556).

She is member of Editorial Board of journals Mediators of Inflammation and International Journal of Molecular Sciences.

## **TEACHING ACTIVITY**

From 29/12/2006 she has been reference teacher at the three-year Degree Course of Biotechnologies, and since 01/10/2008 she has been reference teacher at the Master Degree of Biotechnologies for Health (today Medical Biotechnologies).

### *Teaching activities for Degree Courses of the University of Messina*

She carried out seminars and laboratory activities of General Pathology for the Degree Course Biotechnologies (ay 2006-07), she gave lectures of "Biotechnologies" for the three-year Degree course Scientific Informant on Drugs (a.y. 2006-07 / 2007-08), "Clinical Biochemistry" for the three-year Degree Course in Nursing (a.y. 2007-08), "Clinical Biochemistry" for the three-year Degree course Scientific Informant on Drugs, and "Molecular Biotechnologies" for the Master's Degree Course Biological Sciences (2007-08 / 2008-09). She was advisor of one experimental degree thesis for the Degree course Scientific Informant on Drugs, and of three experimental degree theses for Master's Degree Course Biological Sciences.

From 2007 to 2009 she was Tutor of the Molecular Diagnostics laboratory activities, as part of the General Pathology course in the three-year Degree Course Biotechnologies.

From a.y. 2007-2008 to date she has given lectures of "Clinical Biochemistry and Clinical Molecular Biology" of the Degree Course Biotechnologies, and has been advisor of 37 experimental Degree theses, and tutor of 46 students for laboratory training activities scheduled as optional courses and laboratory internship activities scheduled in their study curriculum.

From a.y. 2008-09 to 2019-2020 she gave lectures of "Molecular and Biochemical Diagnostics" of the Master's Degree Course Biotechnologies for Health, and she was advisor of 27 experimental degree theses (one of which in collaboration with Investigative Unit of Police), and tutor of 31

students for laboratory training activities scheduled as optional courses and internship scheduled in their study curriculum

From a.y. 2015-16 to 2018-19 she gave lectures of "Clinical Biochemistry" in the Degree Course Biology – curriculum Biomedical, and was advisor of four experimental theses, co-advisor of another degree thesis, and tutor for laboratory internship activities of seven students.

From the a.y. 2020-21 she has given lectures, in English, of "Molecular biomarkers of multifactorial disorders" in the Degree Course Medical Biotechnologies, and is advisor of an experimental degree thesis.

From the a.y. 2020-21 she has given lectures, in English, of "Clinical Biochemistry" for the Master Degree Course, single-cycle, Medicine & Surgery. CLM, in English.

### ***Teaching activity for UniME post-graduate and higher education courses***

#### *PhD*

From 2007 to 2009 she was Tutor for laboratory activities of the PhD in "Biochemical Sciences and Molecular Epidemiology".

In the years 2008-2010 she was co-advisor of on PhD thesis in Specialized Medical Sciences on the study of methylation in head and neck tumors.

From 2012 to 2015 she was a member of the Board of Teachers of the PhD School in "Clinical and Experimental Neuropsychopharmacology and applications to neurorehabilitation" (XVIII cycle), and advisor of two experimental PhD theses, focused on the in vitro study of protective effects of nutraceuticals against neurotoxic stimuli and of the pro-inflammatory effects of homocysteine in immune cells.

From 2015 to 2018 she was member of the Board of Teachers of the PhD School "Medical and Surgical Biotechnologies (XXIX cycle).

From a.y. 2018-19 she was member of the Board of Teachers of the PhD School "Translational Molecular Medicine & Surgery".

#### *Specialization Schools*

From a.y. 2008-09 to date she has given lectures of "Clinical Biochemistry" and "Diagnostics of hereditary and acquired genetic pathologies" in the Specialization School (SpS) in Clinical Biochemistry (since 2015 SpS in Clinical Pathology and Clinical Biochemistry), and has been advisor three experimental theses.

She is member of Board of Teachers and gives lectures of Clinical Biochemistry and Clinical Molecular Biology in the SpS in Dermatology and Venereology (from the 2011-12 a.y.), Psychiatry (from the 2015-16 a.y.), Nephrology (from the 2018 a.y. 19), Pharmacology and Clinical Toxicology (from a.y. 2019-20), Medical Genetics (from a.y. 2019-20), and Endocrinology (from a.y. 2020-21).

#### *Master*

In the years 2016-17 and 2017-18 she gave lectures of Clinical Biochemistry and Clinical Molecular Biology and was member of the Scientific-Technical Committee of the II level Master in "Advanced Medical Biotechnologies for Laboratory Diagnostics", co-tutor for laboratory activities in the first edition and advisor of one thesis.

She gave lectures of Clinical Biochemistry and Clinical Molecular Biology in the 2nd level Master "Nutraceuticals, Nutrition and Health" (I ed. 2020).

### ***Teaching activity for foreign universities***

In 2013 she was tutor for the internship laboratory activity (1 month) of one PhD student coming from the University of Frères Mentouri in Costantine (Algeria).

From February 2013 to February 2016 she was co-supervisor, together with Prof. Nikola Kabosov, of the PhD thesis “Computational modeling of genetic data in Neuroinformatics” of the Postgraduate Center of the Auckland University of Technology in Auckland (New Zealand).

Since November 2014 she has been responsible for an international collaboration agreement within the Erasmus + programs with Nottingham Trent University (NTU) in Nottingham (UK) (UK manager: Prof Elisabetta Verderio Edwards) and with Yeditepe University in Istanbul (Turkey) (responsible for Turkey: Prof Dilek Telci).

In the a.y. 2016-17 and 2017-18 she was Coordinator for Erasmus International Mobility of the Master Degree Course Biotechnologies for Health.

As part of the UniME-NTU (UK) agreement, she was supervisor of five outgoing students of the Biotechnology and Biotechnology for Health Degrees, who spent their Erasmus + Traineeship grants (4 months / student) in the Biochemistry Laboratories of the School of Science and Technology of the NTU (a.y. 2015-16, 2016-17, 2017-18), and four incoming students from the Courses of Biochemistry and Biomedical Sciences of NTU (UK), who spent their Erasmus + Traineeship grants (5 months / student) in the Clinical Biochemistry Laboratories and Clinical Molecular Biology of the BIOMORF Department (a.y. 2016-17, 2017-18).

### ***Participation in Committees and Commissions***

Since 2008 she has been a member of the Teaching Committee of the School of Specialization in Clinical Biochemistry (today Clinical Pathology and Clinical Biochemistry).

From 2012 to 2015 she was a member of the Teaching Quality Assurance Group of the Degree Course Biotechnologies.

From 2012 to 2016 she was a member of the Commission for the admission exams to the Degree Course Biotechnologies.

Since 2013 she has been a member and secretary of the Teachers-Student Joint Commission of the Department of Biomedical Sciences, Dental Sciences and Morpho-functional Imaging.

In September 2016, she was member of the Commission for the admission exams to the Master Degree courses Medicine and Surgery as well as Dentistry and Dental Prosthetics, and the Degree Courses Healthcare Professions.

In September 2020 she was member of the Commission for the admission exams to the Master Degree Course Medicine & Surgery.

## **DIAGNOSTIC ACTIVITY FOR THE NATIONAL HEALTH SYSTEM**

Enrolled in the Order of Biologists, since January 2007 she carries out diagnostic activities, as Biologist, in the Clinical Biochemistry Unit of the Department of Laboratory Diagnostics at Polyclinic University Hospital "G. Martino" in Messina.

The activity consists in the determination of circulating markers of osteoporosis, cardiovascular risk, oxidative stress, and fat-soluble and water-soluble vitamins with semi-automated biochemical methods (ELISA, HPLC), and in the determination of gene polymorphisms associated with the risk of osteoporosis and drug-resistance (until 2019), using semi-automated methods of Molecular Biology (Real-time PCR, allele-specific PCR, direct sequencing)

From December 2011 to December 2012 she was a member of the University-AOU Joint Commission.

Since October 2012 she has been the Referent for Quality, for the Accreditation of Procedures, and for the Maxi-Emergencies of the UOSD of Clinical Biochemistry of the AOU G. Martino, and until 2018 she was also referent for Computerization and for the Hygiene and hotel comfort of the same UOSD.

From November 2012 to June 2019 she held the three-year professional task of "Molecular diagnostics sector manager with particular regard to the evaluation of polymorphisms with innovative technical applications" in the same UOSD (the three-year assignment was renewed in the month of June 2016 with a score of 78).

Since January 2019 she has been acting as vice-Director of the Operative Unit of Clinical Biochemistry.

From January 2021 she was appointed member of the Technical College for the evaluation of the assistance activity of Biologists for the Policlinico of Catania.

#### *Professional refresher courses*

- Internship on DGGE technique at the Molecular Diagnostic Laboratories of the S. Raffaele Institute (Milan, December 9-13, 2002).
- Course "Use of cell cultures in the biomedical-Diagnostic field" (Messina, 11/05/2004)
- CRUI Conference "Biotechnologies: a transversal theme in the 7th Framework Program of the European Union" (Messina, 3 March 2006)
- ECM course "Oxidative stress and antioxidant systems. Biochemistry, pathology and laboratory diagnostics" (Messina, 19 May 2006)
- ECM course "Innovative techniques in molecular diagnostics" (Catania, 3-5 July 2006)
- Sigma-Aldrich course "Panorama Array. A tool for both protein expression analysis and proteome discovery" (Messina, March 14, 2007)
- Miltenyi Biotec Course "MACS Technology and its applications" (Messina, 17/05/2007)
- SIBioC Congress "Laboratory medicine: current events and perspectives" (Agrigento, 8-10 / 10 2008)
- "Basic Real-time PCR training course on ABI Prism 7900 - Applied Biosystems" (Rome, November 20-21, 2008)
- Theoretical-practical ECM course "Advanced molecular biology and applications in diagnostics" (Messina, 11-13 December 2008)
- "Genome discovery: from Real-time PCR to genetic analyzer platforms" (Applied BioSystems) (Messina, February 3, 2009)
- Regional SIBioC Congress "The role of laboratory medicine in clinical practice" (Modica, 8-9 October 2009)
- SIBioC interregional congress "The importance of integration between laboratory medicine and clinical medicine" (Cefalù, 22-24 September 2010)
- Regional SIBioC Congress "The resources of the clinical and molecular biochemical laboratory in Sicily" (Piazza Armerina, 11-12 November 2010)
- Theoretical-practical course "Advanced molecular biology: laboratory research and diagnostics" (Messina, 10-12 February 2011)
- 8th Regional SIBIO C Congress "Laboratory medicine in clinical diagnostics" (Caltanissetta, 12-13 October 2011)
- Congress "The Multiple Chemical Sensitivity (MCS) at the crossroads of innovative approaches in environmental medicine. The results of European experimental and clinical research, as bases for clinical framework and care response (Rome, April 19, 2012).
- 9th SIBioC Congress "Role of the laboratory in the clinical management of the patient" (Sciacca, 11-12 October 2012)
- Infoday on the 2011-2012 Finalized Research Call. Technical Assistance for the Planning and Management of Healthcare and Research Projects (Palermo, 21 November 2012)
- Training meeting "Health activities in the field of civil protection" (Messina, April 16, 2013)
- 10th Regional SIBioC Congress "From biomedical research to Laboratory Medicine" (Caltanissetta, 25 September 2013)
- 4th SIBioC Interregional Congress "The Mediterranean Days of Laboratory Medicine" (Sorrento, 9-11 October 2013)

- Participation in the Intercompany Training Project "The process of continuous quality improvement in the Healthcare Companies of the Messina Metropolitan Area: working methodology" (Cittadella della Salute, Messina, 15 October 2013)
- Refresher study day organized by CEERNT (Center Europeen d'Etude et de Recherche et Nouvelle Technologies) "Horizon 2020: for an Italian strategy in European research" (Rome, January 15, 2014)
- 1st Course APRE (European Research Promotion Agency) "The European Research Council and Marie Sklodowska-Curie (MSCA) actions in Horizon 2020" (Messina, 23 June 2014)
- 11th SIBioC Regional Congress-Laboratory Medicine Sect. Sicily "From biomedical research to Laboratory Medicine" (S. Agata di Militello, 26 September 2014)
- 5th SIBioC Interregional Congress - Laboratory Medicine - Section Sicily - Campania - Sardinia (Ragusa Ibla, 4-5 December 2014)
- 2nd Course APRE "The new framework in research and innovation: opportunities for the health theme in Horizon 2020" (Messina, 22 April 2015)
- Study day "Future trends in cancer: from basic to clinical research" (Messina, 26/05/2016)
- 48th SIBioC National Congress "The centrality of the patient between Laboratory and Clinic" (Turin, 18-20 October 2016)
- Ion PGM™ System Workflow Training Course (Monza, 16-18 November 2016)
- 49th SIBioC National Congress "Laboratory and Clinical Medicine: between present and future" (Florence, October 16-18, 2017)
- 2017 Course for "Fire Safety Officer" (15 hours), Training Plan AOU "G. Martino ", with full marks in the final exam
- 50th SIBioC National Congress "Innovation in Laboratory Medicine" (Naples, 16-18 October 2018)
- Conference "Central sensitization syndromes: Multiple Chemical Sensitivity and Fibromyalgia" (Messina, 17 May 2019)
- Conference "The microbiota in the redox regulation of inflammatory processes: diagnostic and therapeutic perspectives in Central Sensitization Syndromes" (Messina, 02/10/2020)
- ECM course "Microbiota, microbiome and mycotherapy" (Messina, 12 October 2019, 7 ECM)
- 51st SIBioC National Congress "Laboratory medicine in the frailty and fragility of laboratory medicine" (Padua, 20-22 November 2019)

### ***Third Mission Activities***

She participated as invited speaker in the 2nd National Congress of United Fibromyalgia Committee (CFU) - Italy (OdV): The Fibromyalgia Syndrome: Experiences, comparison and sharing "(Palermo, Villa Magnisi, OMCEO headquarters, 12/05/2018).

She participated as invited speaker in the Workshop "Multiple chemical sensitivity: definition, estimate of its frequency and correlations with environmental exposures", aimed at defining a shared methodological tool for the analysis of the multiple chemical sensitivity syndrome (MCS) and the construction of an Italian observational system of MCS cases, at the Higher Institute of Health - Department of Environment and Health (Rome, 29/10/2018).

She participated as invited speaker in the 1st National Conference "Multiple Chemical Sensitivity: international state of the art, future prospects for medico-legal accreditation and therapy" (Modena, Aula Magna Policlinico 24/11/2018), broadcast in streaming, with considerable participation by patients.

She was interviewed (video-interview) in the framework of Special Friendly Medicine: Multiple Chemical Sensitivity (19/12/2018) by the TV station Telecolor GreenTeam of the Lombardia Region



(<https://www.telecolor.net/2018/12/speciale-medicina-friend-sensitivity-multiple-chemical/>) (from 6'06 " to 19'39 ").

She participated in the Workshop on Multiple Chemical Sensitivity, organized by the Chronic and Environmental Poisoning Diseases Association (AMICA), during which the Italian Working Group on MCS was set up, that includes independent researchers and doctors, with the objective to elaborate a consensus document on the diagnosis of MCS, based on published scientific evidence, to be presented to institutions to request recognition of MCS as a nosologically defined entity (Ostia, Hotel La Sirenetta, 16-17 / 02/2019).

She participated as invited speaker in the Conference "Multiple Chemical Sensitivity; the role of the environment and epigenetics", organized by three patient associations, AMICA, "CFU-Italia" and "Oltre la MCS" in collaboration with the Senator Anna Maria Bernini (Rome, Sala Zuccari, Senate of the Republic, 13/03/2019) (<https://www.infoamica.it/convegno-sulla-mcs-al-senato-il-13-marzo-2019/>).

She participated as a speaker in the Conference with ECM (n. 11) "Central Sensitization Syndromes: Multiple Chemical Sensitivity and Fibromyalgia" for general practitioners and specialists, biologists, laboratory technicians, physiotherapists, nurses, dieticians, and psychologists, at the Congress Center of the University Hospital of Messina (17/05/2019) (<https://www.facebook.com/cfuitalia/photos/pcb.2679781808712935/2679781202046329/>).

As a member of the Italian Working Group on MCS, she participated in the drafting of the Consensus and Guidelines document on MCS, which was presented to the Ministry of Health on 21/06/2019.

She participated as an expert, and invited speaker, in the Technical Table of the Umbria Region for the launch of a diagnosis protocol of Multiple Chemical Sensitivities (Perugia, Palazzo Broletto, Sala Rossa, 12/09/2019).

She participated in the event "Hundred towns against pain" (28/09/2019), organized by the ISAL Foundation - Research on pain at the Hospital Fogliani in Milazzo (ME).

<https://www.facebook.com/photo?fbid=2358518404265257&set=pcb.2358519150931849>

<https://www.facebook.com/photo?fbid=2358517090932055&set=pcb.2358519150931849>

<https://www.facebook.com/photo?fbid=2358517774265320&set=pcb.2358519150931849>

She was moderator in the ECM Conference (n. 6 ECM) "Microbiota and Mycotherapy in Neuroprotection / Neuroprotection" at the Congress Center of the University Hospital of Messina (12/10/2019).

She participated as invited speaker at the press conference "MCS and environmental hypersensitivity diseases: when the recognition?" (Rome, Chamber of Deputies, Press Room, 28/11/2019) (<https://www.youtube.com/watch?v=sDg1IkGTSjM>).

She participated as invited speaker in the Conference "Fibromyalgia: multidisciplinary approach to phantom syndrome", organized by CFU Italia and Proloco Pazzano, with the patronage of the Municipality of Pazzano (Pazzano, RC 30/11/2019). The event was recorded and broadcast by the TeleMontestella TV station of the Calabria Region (<https://www.facebook.com/146030220932258/videos/810308776075813>).

She was audited, as an expert, by the XII Commission for Hygiene and Public Health of the Senate of the Republic, as part of the joint discussion, in the drafting stage, of the draft law no. 1202 and n. 1272 on Multiple Chemical Sensitivity (Rome, Senate of the Republic, Health Commission Presidential Office, 28/01/2020 - ([https://webtv.senato.it/4621?video\\_evento=62401](https://webtv.senato.it/4621?video_evento=62401))).

She was interviewed (video-interview) on environmental diseases for a cycle of interviews with Italian scholars and professionals organized by the CFU (06/06/2020) (<https://www.youtube.com/watch?v=LpptlWzRWTc>).

She was moderator of the Conference (n. 10 ECM) "The microbiota in redox regulation in the redox regulation of inflammatory processes: diagnostic and therapeutic perspectives in Central Sensitization Syndromes" for general practitioners and specialists, biologists, laboratory technicians,

physiotherapists, nurses, dieticians, and psychologists, at the Congress Center of the Polyclinic University Hospital of Messina (02/10/2020) (<https://www.youtube.com/watch?v=Uz9V51Lezm0>).

She participated as invited speaker in the webinar "Fibromyalgia and Microbiota: between legend and reality" (10/11/2020) (<https://www.facebook.com/1108218752535923/videos/1732022350297833>).

She participated, with a scheduled intervention, in the event "Ad Maiora" which was held on Zoom (9/05/2021), and consisted of a projection of the homonymous docu-movie on fibromyalgia ([https://www.youtube.com/watch?v=\\_62c7vZ9EdQ](https://www.youtube.com/watch?v=_62c7vZ9EdQ)) followed by a discussion with political representatives.

She held a webinar on Zoom entitled "Scientific research and MCS" (14/05/2021) as part of a cycle of on-line seminars organized by the National Association for MCS Recognition in collaboration with CSV Marche, as part of the project, funded by the Marche Region, "MCS, dangerous relationships" aimed at general practitioners and specialists.

She participated as invited speaker at the meeting "Electrosmog: hidden and underestimated dangers of electromagnetic pollution" organized by Lions Club International for an Absolute serve of Catania (Zoom, 29/05/2021) (<https://www.facebook.com/1049112885264122/videos/494874131750215>)(from 1:04:05 to 1:26:10).

Since January 2020, she is President of the Scientific Committee of the CFU-Italy (non-profit OdV), for which he carries out research promotion and awareness raising activities of institutions and the general population on the issues of environmental hypersensitivity diseases, which include multiple chemical sensitivity, fibromyalgia, chronic fatigue syndrome, chronic myalgic encephalitis, and electro-sensitivity.

Since January 2021, she has been a member of the Scientific Committee of the National Association for the Recognition of MCS and other environmental diseases - OdV.

Since February 2021, she has been a member of the International Commission for Electro-Magnetic Safety - OdV (ICEMS-ODV).

### ***Book chapter and list of congress communications***

1L. Caccamo D, Currò M, Condello S, Ferlazzo N, Ientile R. *Transglutaminase, protein misfolding and neurodegenerative diseases*. In: Biologically Active Amines and related Enzymes: Biochemical, Physiological and Clinical Aspects, (a cura di A.Toninello) ed. Transworld Research Network Kerala, 2009, pp. 225-240.

### ***Oral presentations***

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*The undersigned Daniela Caccamo, pursuant to Legislative Decree 196/2003 on the confidentiality of personal data, authorizes the use and storage of the personal data provided in this curriculum.*

Messina, 30/05/2021

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