

PERSONAL INFORMATION

Francesco Cubadda

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Sex Male | Date of birth 24/04/1969 | Nationality Italian

EXPERTISE IN BRIEF

Main expertise is (i) exposure science, covering both dietary exposure assessment methods and human biomonitoring (ii) nanotoxicology and use of NAMs in toxicology and risk assessment (iii) advanced analytical science in the context of toxicology and food safety (iv) regulatory chemical risk assessment, with a long-standing involvement as expert in EFSA Working Groups (>15 since 2008). Co-coordinator of the EFSA-funded project NAMs4NANO, Head of the Italian Delegation to the OECD Working Party on Manufactured Nanomaterials, Head of the National Reference Laboratory on Nanomaterials in Food.

WORK EXPERIENCE

2021 – to date **Senior Researcher, Team leader**

2003 – 2020 **Research Scientist, Team leader**

Istituto Superiore di Sanità - Italian National Institute of Health

Viale Regina Elena 299, 00161, Rome, Italy

• Department of Food Safety, Nutrition and Veterinary Public Health¹

Dr. Cubadda carries out research on chemicals – including nutrients, contaminants and intentionally used substances - in food, and their impact on human health. Oral exposure to nanomaterials, particle toxicology and particle risk assessment is a major field of activity. He leads a research group in the Unit of Human Nutrition and Health.

Scientific interests include analytical chemistry, atomic spectrometry, bioavailability, biomarkers, dietary intake, element speciation, exposure assessment, food chemistry, food safety, human biomonitoring, New Approach Methodologies, micronutrient nutrition, nanomaterials, nanotoxicology, risk assessment, risk-to-benefit assessment, toxicokinetics, total diet studies, and trace elements.

[Public research institution](#)

2005 – 2008 **University Lecturer**

Università degli Studi di Roma Sapienza - Sapienza University of Rome

Piazzale Aldo Moro 5, 00185, Rome, Italy

Lecturer of 'Food chemistry', course of 'Nutrition Science' ('corso integrato di Scienze dell'Alimentazione'), BSc in 'Tecniche della Prevenzione nell'Ambiente e nei Luoghi di Lavoro', Department of Medicine ('I Facoltà di Medicina e Chirurgia'), in the academic years 2005/2006, 2006/2007 and 2007/2008.

[Public University](#)

2001 – 2003 **University Lecturer**

Università degli Studi di Chieti G. D'Annunzio - G. D'Annunzio University of Chieti

Via dei Vestini 31, 66100, Chieti, Italy

¹ Formerly National Centre for Food Quality and Risk Assessment and, afterwards, Department of Food Safety and Veterinary Public Health

Lecturer of 'Food chemistry and dietetic products', MSc in Pharmacy, Department of Pharmacy ('Facoltà di Farmacia'), in the academic years 2001/2002 and 2002/2003.

Public University

1999 – 2002 Research fellow

Istituto Superiore di Sanità - Italian National Institute of Health
Viale Regina Elena 299, 00161, Rome, Italy
• Food Laboratory

He held research contracts with main subject areas analytical chemistry, food safety, and dietary exposure assessment.

SCIENTIFIC ACTIVITY

Research activity

Research in the toxicological field focuses on the hazard assessment of particulate (nano)materials. Dr. Cubadda led the team that characterized the biodistribution and toxicokinetics of synthetic amorphous silica (Nanogenotox Joint Action) and contributed to several other *in vivo* studies in the area of nanotoxicology, e.g., on the reproductive/endocrine and GI effects of titania nanoparticles and E171 following oral administration, the oral toxicity of SAS/E551 (NANOREG and other projects), and the intravenous, oral and inhalation toxicity of nanosilver. He has co-designed the ongoing international *in vivo* study led by RIVM on the impact of agglomeration on particle intestinal absorption. Current activity is focused on the use of NAMs in nanotoxicology. Coordinator of [NANOCELLUP](#) and [NAMS4NANO](#) (Lot 3), EFSA-funded projects on the hazard assessment of nanomaterials with NAM-based approaches. [Physicochemical characterisation and risk assessment](#) of oral exposure nanomaterials and particulate materials with a fraction of nanoparticles are other active scientific fields. His research team has a long-standing experience in the characterization of nanomaterials and analytical detection of metal/oxide nanoparticles in food and biological samples using state-of-the-art techniques such as single particle-ICP-MS and AF4-UV-DLS-MALS-ICP-MS, complementary to electron microscopy. They serve as [National Reference Laboratory on Nanomaterials in Food](#) and are one of the six European expert laboratories supporting the European Commission Joint Research Centre (Ispra, Italy) in the area of regulatory analytical method development and harmonisation via the Nanomaterials in Food Laboratory Group (NIF-LAG).

His group also has a long track record in research on trace elements (TEs) and their effects on human health. Research focuses on both essential and toxic elements in food and deals with the study of - inter alia - bioaccessibility and speciation as crucial factors for understanding biological and toxicological effects of TEs.

Assessing dietary exposure to chemicals is another active research area. A variety of methodological approaches are used including total diet studies (TDS), duplicate diet studies, and biomarkers of exposure (human biomonitoring). Dr. Cubadda steered the Italian TDS 2012-2014, funded by the Ministry of Health, which assessed the exposure to a number of contaminants (inorganic arsenic, aluminium, cadmium, lead, methylmercury, inorganic mercury, uranium, polychlorinated dibenzodioxins, polychlorinated dibenzofurans, dioxin-like polychlorinated biphenyls, non-dioxin like polychlorinated biphenyls, and mycotoxins) and the intake of nutrients (e.g., calcium, iron, copper, zinc, selenium, iodine) for the Italian population. He led the ISS team participating in TDS-Exposure, an EU project aiming at developing and spreading the TDS methodology and harmonizing it at the Pan-European level. He is presently leading the study commissioned by the regional authority aimed at assessing PFAS transfer through the food chain and associated human exposure in the contamination case in Veneto.

He is involved in several national and international activities related to risk assessment and risk-to-benefit assessment.

Activity as expert in risk assessment and other scientific committees

- European Food Safety Authority (EFSA):
 - (i) *Ad hoc* expert of the Working Group (WG) on Trace Elements of the FEEDAP Panel dealing with chromium (2008-2009)
 - (ii) Hearing expert of the WG of the FEEDAP Panel on colouring agents, to give advice on the nanosized fraction of materials used in feeds (2013)

- (iii) Member of the CONTAM Panel WG on the presence of plastic microparticles and nanoparticles in food (2015-2016)
- (iv) Member of the WG of the Scientific Committee 'Nanotechnologies' (2016-2018)
- (v) Member of the WG on Trace elements of the FEEDAP Panel (2017-2018)
- (vi) Member of the WG on Nutritional Additives of the FEEDAP Panel (2018-2021)
- (vii) Member of the WG on Novel Foods of the Panel on Nutrition, Novel Foods and Food Allergens (NDA) (2018-now)
- (viii) Member of the Cross-cutting WG 'Nanotechnologies' of the Scientific Committee (2018-2024)
- (ix) Member of the WG on E171 (titanium dioxide) of the FAF Panel (2020-2021)
- (x) Hearing expert of the FAF Panel (2020-2024)
- (xi) Member of the WG on Dietary Folate Equivalent of the NDA Panel (2020-2022)
- (xii) Member of the NDA Panel WG on Upper Levels (2020-2024)
- (xiii) Hearing expert of the NDA Panel (2022-2024)
- (xiv) Member of the FAF Panel WG Follow-up Tox (2022-2023)
- (xv) Hearing expert of the WG on Specifications of Food Additives of the FAF Panel (2022-2024)
- (xvi) Member of the Cross-cutting WG 'Particle Risk Assessment' of the Scientific Committee (2024-now).
- (xvii) Member of the WG 'Micro and nanoplastics' of the CONTAM Panel (2026-now).
- (xviii) Member of the WG on NAMs of the Scientific Committee (2024-now).

As a result of the participation to the WGs above, he co-authored >150 EFSA Scientific Opinions and Guidances.

- National scientific expert in the EFSA Network for Risk Assessment of Nanotechnologies in food and feed since 2011.
- He has participated to several other risk assessment activities both at the national and international level.

OECD Head of the Italian Delegation to the OECD Working Party on Manufactured Nanomaterials (2024-now).

Publications He has published >250 papers in international journals (>40 as 1st, last author or corresponding author) and authored 7 book chapters.

Citations According to Google Scholar he has >11.000 citations with an *h-index* of 56 (Scopus *h-index* 49).

Projects ▪ He has been the ISS principal investigator in >40 national and European projects in the areas of toxicology, exposure assessment, and food safety.

Coordinated international projects: (i) NANOCELLUP, funded by an EFSA grant under the Call for proposals GP/EFSA/SCER/2020/03 "Use of New Approach Methodologies (NAMs) for the hazard assessment of nanofibers. Lot 1: nanocellulose oral exposure: gastrointestinal digestion, nanofibers uptake and local effects" (2020-2023); (ii) NAMs4NANO - "Integration of New Approach Methodologies results in chemical risk assessments: Case studies addressing nanoscale considerations" (GP/EFSA/MESE/ 2022/01) Lot 3 (2023-2026).

Reviewer activity He has reviewed >130 manuscripts for several peer-reviewed journals, including *Analytica Chimica Acta*; *Analytical and Bioanalytical Chemistry*; *Analytical Chemistry*; *Archives of Toxicology*; *Biological Trace Element Research*; *British Journal of Nutrition*; *Chemosphere*; *Critical Reviews in Environmental Science and Technology*; *Critical Reviews in Food Science and Nutrition*; *Ecotoxicology and Environmental Safety*; *Environmental Health Perspectives*; *Environmental Monitoring and Assessment*; *Environmental Pollution*; *Environmental Research*; *Environmental Science: Nano*; *European Food Research and Technology*; *Food Additives and Contaminants*; *Food and Chemical Toxicology*; *Food Chemistry*; *Food Research International*; *Frontiers in Public Health*; *Human and Ecological Risk Assessment*; *International Journal of Environmental Research and Public Health*; *Journal of Agricultural and Food Chemistry*; *Journal of Analytical Atomic Spectrometry*; *Journal of Exposure Science and Environmental Epidemiology*; *Journal of Health, Population and Nutrition*; *Journal of Nanoparticle Research*; *Journal of Nanoscience and Nanotechnology*; *Metalomics*; *Nanoscale*; *Nanotoxicology*; *Particle and Fibre Toxicology*; *Reproductive Toxicology*; *Talanta*; *The Science of the Total Environment*; *Toxicology*, *Toxicology and Applied Pharmacology*.

- Editorial activity** Associate editor of *Frontiers in Toxicology*. He guest-edited special issues for the *Journal of AOAC International* (2004), *Pure and Applied Chemistry* (2010), *Nanomaterials* (2020).
- Presentations** He coauthored >170 contributions at scientific conferences with proceedings (mainly international) and delivered some 50 orals (mainly invited). He has made >70 invited presentations at seminars and scientific meetings without proceedings, at both the national and international level.
- Conferences** Chairperson of the 3rd International IUPAC Symposium on Trace Elements in Food (TEF-3, 2009), the national conferences 'Nanotechnologies and Nanomaterials in the Food Sector and their Safety Assessment' (2013, 2016, 2019, 2023), the national conferences 'Arsenic in the Food Chains' (2015) and 'The national Total Diet Study: Intake of nutrients and exposure to contaminants of the Italian population' (2018).
- He participated in the Scientific/Organizing/Steering Committees of >15 international and national meetings. He chaired sessions in several national and international meetings.
- Training** He has been active as academic supervisor and as external PhD reviewer for various universities worldwide.
- He has hosted PhD students from Italy and other countries (e.g., Brazil, Spain, Sweden) for research stays at his laboratory.
 - He held >50 among lessons, seminars and short courses on topics such as food safety, chemical contamination of food, exposure assessment, risk assessment, trace elements and/or nanomaterials in food.
 - Academic seminars and lessons (20 in total) were delivered at the University of Turin (2019), University of Milan (2016, 2013, 2010, 2007), University of Piacenza (2013), Universities of Rome (2019, 2006, 2005, 2001, 2000, 1999), University of Teramo (2003), University of Molise (2000).
 - Active as trainer in the Italian Continuing Medical Education programme (ECM). He organized as scientific supervisor the training course 'Trace element speciation: key aspects in public health, state of the art and perspectives' (in Italian) (ISS, Rome, 2015). He has been active, both as lecturer and as part of the scientific secretary, in >10 other ECM courses.
- He has also contributed to several training activities directed to an international audience, e.g. in the frame of European projects. He was member of the training team of the courses on chemical risk assessment (Valencia 2020, virtual 2022, Rome 2022) and nutritional risk assessment (virtual 2021, Barcelona 2022, Rome 2023, Vienna 2024) organized within the BTSF programme.
- Activity as expert lab and Interlaboratory trials** Besides being one of the expert laboratories supporting the EC-JRC in the NIF-LAG activity, his group participated to several international interlaboratory comparisons on the determination of trace elements and their chemical species in biological fluids (i.e. urinary iodine) and food, as well as on the analytical determination of nanomaterials, either as pristine materials or in food matrices.

EDUCATION

He holds a MSc summa cum laude in Chemistry and a PhD in Toxicology, both at Sapienza University of Rome.

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Rome, 16 July 2026

