



CURRICULUM VITAE ABREVIADO (CVA)

Date 22/01/2024

Part A. PERSONAL INFORMATION

First name	María		
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Sex	Mujer	Birth date	se
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A.1. Current position

Position	Senior scientist (Investigadora A3/Científica Titular de OPI)		
Initial date	01/08/2018		
Institution	Instituto de Salud Carlos III (ISCIII)		
Department/Center	Chronic Diseases Epidemiology	Centro Nacional de Epidemiología	
Country	Spain	Teleph. number	918222364
Key words	Environment, Molecular Epidemiology, Biostatistics, Chronic diseases		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
May 2021 – Today	Associate Professor, Department of Preventive Medicine & Public Health, Universidad Autónoma de Madrid, Spain
January 2013 – July 2018	Junior Group Leader (Miguel Servet Program I & II), Instituto de Investigación Sanitaria INCLIVA, Valencia Spain
September 2011 – December 2012	Visiting Scholar, Department of Environmental Health Sciences, Johns Hopkins University, Baltimore, US.
August 2007 - July 2012	Post-residency Researcher (Rio Hortega Program), Centro Nacional de Inv. Cardiovasculares Carlos III (CNIC)
June 2003 – May 2007	Internal Resident Physician in Preventive Medicine & Public Health, Hospital Universitario Dr. Peset, Valencia Spain
September 2000 - June 2002	External Reseident Physician, Les Hôpitaux Universitaires De Strasbourg, France

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Epidemiology	Johns Hopkins University, Baltimore, US	2011
PhD in Public Health and Methods for Biomedical Research	Universidad Autónoma de Barcelona, Spain	2010
Diploma in Methods for Research in Health Sciences	Escuela Valenciana de Estudios de la Salud. Valencia, Spain	2006
Master in Public Health	Escuela Nacional de Sanidad, Madrid, España	2004
Music Teacher Degree. Specialty Piano.	Conservatorio Oficial de Música de Torrent, Spain	2003
Doctor in Medicine & Surgery	Universitat de València, Valencia, España	2002

Part B. CV SUMMARY

As a medicine doctor (University of Valencia, 2022, 2 years of work experience at Les Hôpitaux Universitaires de Strasbourg during Erasmus Program), specialized in Preventive Medicine & Public Health (Hospital Dr. Peset, 2007), I became interested in the impact of environmental exposures on population health. Motivated by this, I began a PhD in Public Health and Methods for Biomedical Research at the Autonomous University of Barcelona in 2005. My research focused on the association of cadmium and lead with cardiovascular risk factors (two of the publications with over 200 citations in [AJE](#) and [EHP](#)). Subsequently, I



conducted a research stay at the Environmental Epidemiology and Cancer Area of the National Center for Epidemiology [CNE] (ISCIII, 2005) and at the Department of Environmental Health Sciences, Johns Hopkins School of Public Health, Baltimore (2006).

In my pursuit of a high-level scientific career, I began a second doctoral thesis in 2007 at Johns Hopkins University, focusing on molecular and genetic epidemiology. I also was awarded a Rio Hortega contract in 2007, enabling me to adhere to a joint Johns Hopkins University-CNIC excellence program as a post-residency researcher at the CNIC, where I served on 3 study committees for the PESA study (PI V. Fuster). I received the "The 2009 Johns Hopkins Louis I. and Thomas D. Dublin Award for the advance of Epidemiology and Biostatistics." I contributed to advancing the field of environmental cardiology, with additional articles receiving over 190 citations, published in [EHP](#) and [Epidemiology](#). Harlan M. Krumholz, editor-in-chief of *Circulation: Cardiovascular Quality and Outcomes*, sent a personal email: "Maria, Congratulations on your work in [CQO](#)—... I wondered if [cadmium] will become an official risk factor in the future..."

From 2013 to 2018, I expanded my research leadership skills at the Instituto de Investigación Sanitaria Hospital Clínico de Valencia (INCLIVA), holding Miguel Servet type I and II contracts as Junior Group Leader. My studies first reported on the potential of 5-hydroxymethylcytosine as a marker of environmental exposure ([Editorial EHP "Science Selection"](#)). Project PI15/00071 (2015-2018, where I was the Principal Investigator) explored epigenetic and oxidative stress mechanisms related to metals. I developed advanced expertise in handling microarray and NGS data ("[MLML2R](#)" package for DNAm/hm estimation) and published in top journals ([Environment International](#), [Redox Biology](#), [IJE](#), and [PTB](#), among others), providing evidence on the underlying epigenetic mechanisms of cardiovascular risk associated with metals. In 2017, I received the [III AstraZeneca Young Investigators Award](#) and the [VIII Carta de Poblament Ciutat de Torrent Award](#).

In my current position as a Senior Scientist at the CNE, ISCIII, I coordinate (PI) 2 active projects totaling €536,000 in direct costs and collaborate on national and international projects with ISCIII, US-NIH, and UK-MRC. I have supervised 6 doctoral theses (three completed in the last year), 16 master theses, and mentored 3 Preventive Medicine and Public Health residents and 5 external rotators. I teach in 2 public health (National School of Health and UNED-ISCIII) and 1 epidemiology (Autonomous University of Madrid [UAM]) master programs, as well as in the Biomedical Engineering undergraduate program (UAM). I wrote an editorial for [The BMJ](#) and I was part of the [American Heart Association writing group](#) dedicated to officialize metals as emerging cardiovascular risk factors. I participated in 3 COST actions (2 as a Management Committee Member: [EPICHEM](#) and [Epigenetics: Bench to Bedside](#)) and collaborate with international consortia such as [CKDGen](#) and [DEEP](#). I am an Adjunct Assistant Professor at Johns Hopkins University, resulting in collaborations with cohorts funded by the [NIH](#). I received 2 mobility grants for research in the U.S. (from Generalitat Valenciana in 2017 and the Fulbright Commission-Ministry of Education and Science in 2021), allowing me to collaborate with the MESA and Regards cohorts and establish the "[Metal GWAS Initiative](#)" consortium that I lead.

My team, the "Integrative Epidemiology Group," has been operating since 2019 under an ISCIII-INCLIVA official agreement, of which I am a co-promoter, with a established track record (common publications and Human Resources contracts, I am PI). We investigate the relationship between environmental agents on chronic diseases with an integrated view of molecular mechanisms. Our recent methodological developments include: 1) BKMR-probit for mixtures analysis ([IJE](#)), and 2) R packages extension in collaboration with Dr. Feng (Columbia University) ("[SIS](#)"); and Dr. Jérolon (Paris University) ("[multimediate](#)") – I am last author in the methods papers. Our findings and methodological developments contribute to public health and precision medicine prevention, while unveiling paradigm-changing biological aspects of environmental risks.

Part C. RELEVANT MERITS

H index (Web of Science): 35 (40 in Google Scholar). Nº of ANECA "**sexenios**": **3 granted**.

C.1. Publications, selected out of 101 indexed articles (3984 citations, Scopus).

- 1.** Grau-Perez M, Domingo-Relloso A, Garcia-Barrera T, ..., Tellez-Plaza M. 2023. Association of single and joint metals with albuminuria and estimated glomerular filtration longitudinal change in middle-aged adults from Spain: The Aragon workers health study. *Environ Pollut.* Feb 1;318:120851. doi: 10.1016/j.envpol.2022.120851 (**13/13**). **IF=8,9**
- 2.** Delgado-Velandia M., Gonzalez-Marrachelli V., Domingo-Relloso A.,..., Tellez-Plaza y Sotos-Prieto M. Healthy lifestyle, metabolomics and incident type 2 diabetes in a population-based cohort from Spain. 2022. *International Journal of Behavioral Nutrition and Physical Activity*, 19(1):8. doi: 10.1186/s12966-021-01219-3. (**14/15, co-last author, CA=Tellez-Plaza**). **IF= 8,7**
- 3.** Galvez-Fernandez M, Sanchez-Saez F, Domingo-Relloso A, .., Monleon D. 2022. Gene-environment interaction analysis of redox-related metals and genetic variants with plasma metabolic patterns in a general population from Spain: The Hortega Study. 2022. *Redox Biology*. June;52:102314. doi:10.1016/j.redox.2022.102314 (**15/18, CA=Tellez-Plaza**). **IF=11.4**
- 4.** Rifo-Campos AL, Fuentes-Trillo A, Tang WY, ..., Tellez-Plaza M. In silico epigenetics of metal exposure and subclinical atherosclerosis in middle aged men: pilot results from the Aragon Workers Health Study. *Philos Trans R Soc Lond B Biol Sci*. 2018 Jun 5;373(1748):20170084 (**17/17, CA=Tellez-Plaza**). **IF=6.3**
- 5.** Navas-Acien A., Domingo-Relloso A., Subedi P. ,... Cole, S.A. 2021. Blood DNA Methylation and Incident Coronary Heart Disease: Evidence from the Strong Heart Study. *JAMA Cardiology*. doi: 10.1001/jamacardio.2021.2704. (**24/27, CA=Domingo-Relloso, my PhD student at the time**). **IF= 24**
- 6.** Domingo-Relloso A., Rifo-Campos A., Haack K,, Tellez-Plaza M. 2020. Cadmium, smoking, and human blood DNA methylation profiles in adults from the Strong Heart Study. *Environmental Health Perspectives*, 128 (6). doi: 10.1289/EHP6345 (**13/13, CA=Tellez-Plaza**) **IF=10.4**
- 7.** Domingo-Relloso A, Grau-Perez M, Galan-Chilet, ..., Tellez-Plaza M. 2019. Urinary metals and metal mixtures and oxidative stress biomarkers in an adult population from Spain: The Hortega Study. *Environment International*, 123, pp. 171-180. doi: 10.1016/j.envint.2018.11.055. (**16/16, CA=Tellez-Plaza**). **IF=11.8**
- 8.** Arce Domingo-Relloso, Yang Feng, Zulema Rodriguez-Hernandez, ..., Maria Tellez-Plaza, Jose D. Bermudez Omics feature selection with the extended SIS R package: identification of a body mass index epigenetic multi-marker in the Strong Heart Study. *American Journal of Epidemiology* (Accepted 13/11/2023) (**7/8, Co-last author, CA= Domingo-Relloso, My PhD student at the time**). **IF=5.0**
- 9.** Domingo-Relloso A, Joehanes R, Rodriguez-Hernandez Z, ..., Tellez-Plaza M. Smoking, blood DNA methylation sites and lung cancer risk. *Environ Pollut.* 2023 Oct 1;334:122153. doi: 10.1016/j.envpol.2023.122153 (**20/20, CA=Domingo-Relloso, My PhD student at the time**). **IF=8,9**
- 10.** Inmaculada Galan-Chilet, Maria Grau-Perez, Griselda De Marco, ..., Maria Tellez-Plaza. A gene-environment interaction analysis of plasma selenium with prevalent and incident diabetes: The Hortega study. *Redox Biol.* Agosto de 2017; 12: 798-805. doi: 10.1016 / j.redox.2017.04.022. (**12/12**). **IF=11,4**

C.2. Congress: Oral (18 national, 12 international) and poster (15 national, 27 international) scientific communications, and 11 invited conferences and seminars.

Selected Invited conferences.

- “Keynote Speaker”. Reunión Científica de la Federación Europea de Sociedades de Elementos Traza y Minerales. September de 2022, Madrid, Spain.
- Virtual Mini-Symposium: “Cadmium Exposure and Cardiovascular disease: evidence as risk factor”. Organizers: Jaymie Meliker y Maria Tellez-Plaza (18/05/2021, 10 a.m.-12 p.m., NY)
- Jornada Híbrida (Presencial/Virtual): “II Jornada del Centro Nacional de Epidemiología. Conoce el CNE”. Organizers: María Téllez-Plaza, Virginia Lope, Rosa Cano Portero y Pilar Gallego. (13/12/2021, 9h30 a.m. a 2 p.m., Madrid)
- “Environmental metals, epigenetics and cardiovascular disease in epidemiologic studies.” Satellite Scientific Meeting, The Royal Society. Epigenetic Readers, Writers and Erasers. Kavli Royal Society International Center, Chicheley Hall, Chicheley, UK (2017).
- Annual Workshop, Statistical Analysis of Infinium Methylation Arrays. Waterloo, Campus, Kings College, London. June 2016. “Maximum-likelihood estimation of consistent DNA methylation and hydroxymethylation proportions from human blood samples”.

C.3. Research projects.

1. Harnessing DNA methylation variation between populations to understand disease discordance across ancestries. UK Medical Research Council MR/X021599/1. Start 01/06/2023, 60 months duration. Contribution: Collaborator representing the Strong Heart Study (PI at ISCIII: 16000 EUR, Institutional agreements for the funds transfer in process).
2. El papel causal de la exposición a metales en la progresión de la aterosclerosis subclínica: una aproximación integradora para informar a la prevención en medicina de precisión. AESI-2022 PI22CIII/00029, 2023-2025. 96000 € + 1 Human Resources contract MECES 3. Contribution: Principal Investigator. Start 01/01/2022, 3 years.
3. El papel causal del selenio en la diabetes: un estudio ómico para informar la medicina de precisión (SelenOMICs) (Agencia Estatal de Investigación de España). PID2019-108973RB-C21 and C22. 2020-2023. 423.000 € + 2 FPI PhD students in total, two Subprojects. Contribution: Coordinator and Co-Principal Investigator Subproject 1. Start: 01/06/2020, 4 years.
4. Metales, epigenética y arterosclerosis subclínica. Acción Estratégica en Salud, Ministerio de Economía y Competitividad, Gobierno de España. PI15/00071 (196.500 €). Contribution: Principal Investigator. Start: 01/01/2016, 3 years.
5. 1R01ES025216, Arsénico, Epigenética y Enfermedades Cardiovasculares en Indios Americanos Instituto Nacional de Ciencias de la Salud Ambiental (NIEHS). Active in 2015-2019. 2.000.000 €. Contribution: Collaborator. I have leaded all methodological aspects of statistical analysis, implemented by my PhD student A. Domingo-Relloso.
6. CP12/03080, Metilación e hidroximetilación del ADN, Exposición a metales y Riesgo cardiovascular: un estudio epidemiológico Instituto de Salud Carlos III. (Instituto de Investigación Sanitaria Hospital Clínico de Valencia INCLIVA). Active in 2013-2015. 60.000 €+1 FP2 Human Resources Contract. Contribution: Principal Investigator.
7. Proyecto CORDELIA (AES ISCIII, PMP22/00033 ~ 4.9 M Euros). Contribution: Collaborator (co-PI representing the Hortega Study, in process). I am representing the Hortega Study because I was the PI of the project funding genotyping data (PID2019-108973RB-C21 y C22), which is main contribution to the consortium.

C.4. Contracts, technological or transfer merits.

Co-ownership of software “methLOY: Detecting mosaic loss of Y events using methylation-array-intensity data” (Authors: M. Tellez-Plaza (50%) from ISCIII, and J.R. Gonzalez (45%) and D. Pelegrí (5%) from ISGlobal). Institutional agreement and transfer strategy, in process.