

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	María Coral		
Family name	Del Val Muñoz		
Gender (*)	Female	Birth date	
Social Security, Passport, ID number			
e-mail	delval@decsai.ugr.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-2212-2039		

(*) Mandatory

A.1. Current position

Position	Associate Professor/Profesor Titular		
Initial date	14/08/2012		
Institution	University of Granada		
Department/Center	Computer Science and Artificial Intelligence Dpto.	E.T.S.I Informática y Telecomunicaciones	
Country	Spain	Teleph. number	958240468
Key words	Biohealth computing, Artificial intelligence, translational biomedicine, data-mining, Biophysics		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
Since 2012	Associate Profesor/Profesor Titular UGR
2006-2012	Assistant Professor/Profesor Contratado Doctor UGR
2004-2005	Researcher/Científico Contratado Genomic Division Deutsches Krebsforschungszentrum (DKFZ)
2002-2004	Researcher/Científico Contratado Bioinformatics Dpt. Deutsches Krebsforschungszentrum (DKFZ)
2000-2002	Postdoctoral Bioinformatics and Molecular Biophysics Dpt. Deutsches Krebsforschungszentrum (DKFZ)
200	Postdoctoral CSIC Estación Experimental Zaidin. Microbiology Dpt
1994-1999	Predocctoral Fellow CSIC Estación Experimental Zaidin. Microbiology Dpt

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Science. Biology	Universidad de Granada	1999
Master in Edafology and Vegetal Biology	Universidad de Granada-UNESCO	1999
Degree in Biology	Universidad de Granada	1994

Part B. CV SUMMARY (max. 5000 characters, including spaces)

My **interdisciplinary and international trajectory** with specialization in molecular biology, and computer science started in 1995 with my PhD in molecular ecology and microbiology at the Spanish Research Council (CSIC) EEZ Granada. Afterwards in 2002, I joined the German

Cancer Research Center (DKFZ) first at the Molecular Biophysics and Bioinformatics Dpt. and later at the Division of Genome Analysis. In 2005, I was awarded with a junior-track at the Computer Science Department (DECSAI) (<http://sci2s.ugr.es/>) at the University of Granada and since 2012 I hold an Associate Professorship in this Department where I co-lead the Mining for Modelling Lab (M4MLab) with Dr. Zwir. I am also member of the Andalusian Research Institute in Data Science and Computational Intelligence (DaSCI), University of Granada (UGR) and member of the Biosanitary Research Institute of Granada (ibs.GRANADA).

My **research focuses on Biohealth Computing**, an interdisciplinary field that applies computational methods to healthcare, life sciences, and biomedical research. This field **integrates** biology, health informatics, computer science, and engineering **to improve diagnostics, therapies, and patient outcomes**.

I have led or participated in **national and international research funding**, including 4 EU projects, 4 German Federal Ministry grants, 8 Spanish National projects, and 4 IBS Carlos III projects. **My international collaborations** include DKFZ, Howard Hughes Janelia Research Campus, Washington University School of Medicine (WASHU), and the Human Genetics Institute of Universität Ulm, funded by José Castillejo, HHMI Collaborative Program, and DKFZ Gastwissenschaftler.

My research has resulted in **52 JCR publications** (**41 Q1** (17 D1), 6 Q2, 5 Q3) **in top-tier journals**. I have 1,638 citations in WOS (1,572 excluding self-citations, H-index: 22), 1,833 citations in SCOPUS (H-index: 24), and 3,265 citations in Google Scholar (H-index: 28). **72.7% of my JCR articles rank among the top 25% most cited** in their category, and **77.3% are published in top- ranked journals** (CiteScore). I rank 39th globally in InfluScore at UGR (Influratio: 730) and **actively promote open science**, ensuring all publications are in Open Access or institutional repositories.

My research has been **successfully translated into real-world applications**, bridging scientific discovery and societal impact. My work has led to **technology transfer initiatives**, such as the Steinbeis Technology Transfer Center for Genome Informatics in Germany. Additionally, my research has resulted **two patents**: U.S. Utility Patent (14/737,094) on Scalable Unsupervised Multisource Analysis and a new patent application (P2024300174) for Novel Biomarkers for Early Diagnosis of Malignant Melanoma. I also contribute as a researcher to the TSI-100927-2023-1 project under the CÁTEDRAS ENIA 2022 initiative, **promoting university-industry collaborations in AI research**.

At UGR, I have taught 1,410 hours of undergraduate and 510 hours of master's courses, supervising **3 defended PhD theses** (**5 more expected by 2025-2026, including an Industrial PhD**), 15 master's theses, and 24 undergraduate projects. Beyond research and teaching, I have actively **contributed to scientific evaluation and advisory committees** and served as an expert panelist for ANECA. Since 2019, I have been an interdisciplinary expert evaluator for the European Commission (H2020 framework), focusing on AI applications in biology.

Part C. RELEVANT MERITS (*sorted by typology*)

C.1. Publications (*see instructions*)

1. **Coral del Val**; Elisa Díaz de la Guardia-Bolívar; et., al, and C.R. Clonninger. 2024. **Gene expression networks regulated by human personality**. *Mol Psychiatry* **29**, 2241–2260 (2024). <https://doi.org/10.1038/s41380-024-02484-x>. IF: **11,93**. **Q1, D1**. 1/14 authors
2. Peña-Martín, Jesús; Belén García-Ortega, María; Palacios-Ferrer, José Luis; et al; **Del Val C***, Pérez Del Palacio* J, Marchal, Juan Antonio*. 2024. **Identification of novel biomarkers in the early diagnosis of malignant melanoma by untargeted liquid chromatography coupled to high-resolution mass spectrometry-based metabolomics: a pilot study**. *Br J Dermatol*. 2024 Apr 17;190(5):740-750. <https://doi.org/10.1093/bjd/ljae013>. IF: **11,93**. **Q1, D1**. 14/14 authors
3. Zwir, Igor; Arnedo, Javier; Mesa, Alberto; **del Val, Coral**; de Erausquin, Gabriel A.; Robert Cloninger, C.2023. **Temperament & Character account for brain functional connectivity at rest: A diathesis-stress model of functional dysregulation in**

- psychosis.** *Molecular Psychiatry*. **28**, 2238–2253 (2023). <https://doi.org/10.1038/s41380-023-02039-6>. IF: **11,93**. **Q1**, **D1**. 4/6 authors
4. Lehtimäki, Miika; Mishra, Binisha H. H.; **Del-Val, Coral**; et al; Mishra, Pashupati P. P. 2023. **Uncovering the complex genetic architecture of human plasma lipidome using machine learning methods.** *SCIENTIFIC REPORTS*. **13**. ISSN 2045-2322. <https://doi.org/10.1038/s41598-023-30168-z>. IF: **11,93**. **Q1**, **D1**. 3/11 authors
 5. Díaz de la Guardia-Bolívar, Elisa; Barrios-Rodríguez, Rocío; Zwir, Igor; Jiménez-Moleón, José Juan; **del Val, Coral***. **Identification of novel prostate cancer genes in patients stratified by Gleason classification: Role of antitumoral genes.** *International Journal of Cancer*. 2022. 151-2, pp.255-264. doi: 10.1002/ijc.33988. IF: **6.4**. **Q1**. 5/5 authors
 6. **Del Val C**, Zwir I, Hintsanen M, ..., Cloninger CR*. **Evolution of genetic networks for human creativity.** *Mol Psychiatry*. 2021 Apr 21. doi: 10.1038/s41380-021-01097-y. IF: **11,93**. **Q1**, **D1**. 1/16 authors Karathanou K, Lazaratos M, Bertalan É, Siemers M, Buzar K, Schertler GFX, **Del Val C**, Bondar AN*. **A graph-based approach identifies dynamic H-bond communication networks in spike protein S of SARS-CoV-2.** *J Struct Biol*. 2020 Nov 1;212(2):107617. doi:10.1016/j.jsb.2020.107617. PMID: 32919067 . IF: **3,23**. **Q1**. 7/8 authors
 7. Griñán-Lisón C, Olivares-Urbano MA, Jiménez G, López-Ruiz E, **Del Val C**, Morata- Tarifa C, Entrena JM, González-Ramírez AR, Boulaiz H, Zurita Herrera M, Núñez MI, Marchal JA*. **miRNAs as radio-response biomarkers for breast cancer stem cells.** *Mol Oncol*. 2020 Mar;14(3):556-570. doi: 10.1002/1878-0261.12635. PMID: 31930680. IF: **6,574**. **Q1**. 5/12 authors.
 8. **Del-Val C**, Zwir I., Arnedo, J., ... Cloninger CR*. **Three Genetic-Environmental Networks for Human Personality.** *Mol. Psychiatry*. 2019 Nov 21. doi: 10.1038/s41380- 019-0579-x. PMID: 31748689. IF: **11,93**. **Q1**, **D1**. 1/30 authors.
 9. Ortega-García, María Belén; Mesa, Alberto; Moya, Elisa L.J.; et al; García, María Ángel. 2020. **Uncovering Tumour Heterogeneity through PKR and nc886 Analysis in Metastatic Colon Cancer Patients Treated with 5-FU-Based Chemotherapy.** *Cancers*. 12-2. ISSN 2072-6694. IF: **13,615**. **Q1**. 13/15 authors.
 10. Zwir I, Mishra P, **Del-Val C**, Gu CC, de Erausquin GA, Lehtimäki T, Cloninger CR*. **Uncovering the complex genetics of human personality: response from authors on the PGMRA Model.** *Mol. Psychiatry*. 2019 Mar 18. doi: 10.1038/s41380-019-0399-z. IF: **11,93**. **Q1**, **D1**. 3/6 authors
 11. Zwir I, Arnedo J, **Del-Val C**, Cloninger CR*. **Uncovering the complex genetics of human character.** *Mol Psychiatry*. 2018 Oct 3. doi:10.1038/s41380-018-0263-6. IF: **11,93**. **Q1**, **D1**. 3/27 authors Zwir I, Arnedo J,
 12. **Del-Val C**, ...I., Cloninger CR*. **Uncovering the complex genetics of human temperament.** *Mol Psychiatry*. 2018 Oct 2. doi: 10.1038/s41380-018-0264-5. IF: **11,93**. **Q1**, **D1**. 3/27 authors
 13. Arnedo J, Svrakic DM, **Del Val C**, ..., Zwir I*. **Uncovering the hidden risk architecture of the schizophrenias: confirmation in three independent genome-wide association studies.** *Am J Psychiatry*. 2015 Feb 1;172(2):139-53. IF: **13,615**. **Q1**, **D1**. Highly cited. 3/12 authors. WOS (159)

Book chapter.

Martorell-Marugán, Jordi; Tabik, Siham; Benhammou, Yassir; **del Val, Coral**; Zwir, Igor; Herrera, Francisco; Carmona-Sáez, Pedro. 2019. **Deep Learning in Omics Data Analysis and Precision Medicine.** Codon Publications, Brisbane (AU). ISBN 9780994438195.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. Project. TSI-100927-2023-1 **“Inteligencia artificial ética, responsable y de propósito general: aplicaciones en escenarios de riesgo”**. Organismo: MINISTERIO DE ASUNTOS ECONOMICOS Y TRANSFORMACION DIGITAL. IP: F. Herrera e Isaac Triguero. Convocatoria: Cátedras ENIA en el marco de la agenda España Digital 2025 y el PTRTR Período: 02/03/2023-31/12/2025. Subvención: 1.200.000 €. Team member.

2. Project: EXC-2023-06. ***“Integractómica: Integración de datos multiómicos y de imagen mediante aplicación de algoritmos de Inteligencia Artificial para diagnóstico e identificación de vías moleculares implicadas en el desarrollo de Enfermedades Raras”***. Conserjería de Salud y Consumo. IP: Beatriz García Fontana. 01/01/2024-31/12/2026. 199.651,5 €. Team member.
3. Project: PP2023.El.08. ***“Entrenamiento de un algoritmo de machine learning para implementar la conexión entre la clínica y el laboratorio en aislados con multiresistencia natural al benzimidazole del parásito Trypanosoma cruzi”***. IP: Francisco Olmos. (UGR). 01/01/2024-31/12/2025. 10.000 €. Team member.
4. Project. PID2021-125017OB-I00, Track2Health: **HACIA UNA COMPRENSION MULTIFACETICA DE LA SALUD MENTAL BASADA EN LA "TRAYECTORIA" DEL PACIENTE PARA MEJORAR LOS TRATAMIENTOS Y EL BIENESTAR ENFOCADO EN LA PERSONA. MINISTERIO DE CIENCIA E INNOVACION**. IP: Coral del Val (Universidad de Granada). Periodo: 01/09/2022-31/08/2025. Subvención: 121.000 €. Team member.
5. Project. RTI2018-098983-B-I00, **REVISANDO LA REPLICABILIDAD GENETICA MEDIANTE UN ENFOQUE MULTI- OMICO Y PERSONOMICO PARA EL DISEÑO DE TRATAMIENTOS PERSONALIZADOS BASADOS EN LAS CAUSAS DE LA ENFERMEDAD. PROYECTOS DE INVESTIGACION DEL CONVOCATORIA 2018**. IP: Coral del Val Muñoz. (Universidad de Granada). 01/01/2019-31/12/2021. 114.950 €.
6. Project. PIE16/00045, **IMPLEMENTATION OF A NOVEL PLATFORM TO MONITOR TUMOUR HETEROGENEITY AS A CRUCIAL DETERMINANT FOR INDIVIDUALIZED DIAGNOSTIC AND THERAPEUTIC OUTCOME**. PROYECTOS EN SALUD FIBAO - INSTITUTO CARLOS III. Jose Antonio Marchal. (FIBAO). 01/01/2017- 31/12/2019. 493.625 €. IP Bioinformatics: Coral del Val.
7. Project. DPI2015-69585-R, **TRADUCIENDO INFORMACION DE ENFERMEDADES COMPLEJAS , COMPORTAMIENTOS Y SUS COMORBILIDADES EN CO. PROYECTOS DE INVESTIGACION DEL CONVOCATORIA 2015**. IP: Coral del Val Muñoz. 01/01/2016-31/12/2018. 72.600€. MINISTERIO DE ECONOMIA Y COMPETITIVIDAD. Team member.
8. Project. **INTEGRACION DE BIG DATA GENETICOS y DATOS CLINICOS: SUPERVIVENCIA Y CALIDAD DE VIDA EN PARTICIPANTES CON CANCER DE PROSTATA**. Jose Juan Jimenez Moleón. (Instituto Universitario de Biosanitaria FIBAO-UGR). 04/06/2015-06/05/2018. 95.000 €. Team member.

C.4. Contracts, technological or transfer merits,

1. Contrato DRFC2 referencia MMT24-EEZ-01-01: PROGRAMA MOMENTUM CSIC: DESARROLLA TU TALENTO DIGITAL. Titulo: ***“Integración de -ómicas y minería de datos para el estudio de interacciones múltiples en sistemas agrícolas mediterráneos frente al cambio climático.”*** INVESTIGADOR PRINCIPAL: Juan de Dios Alché Ramírez/**Coral del Val Muñoz**. Duration: 20/11/2024- 19/11/2028. Budget: 329.085,9 €. Convocatoria de ayudas extraordinarias de atracción de talento en competencias digitales.
2. Juan Antonio Marchal Corrales; **Coral del Val Muñoz**; Jesus Peña Martin. P202430017. ***Novel Biomarkers for early diagnosis of malignant melanoma***. Spain. 11/01/2024.
3. Igor Zwir; Francisco Javier Arnedo Fernandez; **Coral del Val Muñoz**; Dragan M. Svrackic; Robert Clonninger; Gabriel Alejandro Eurasquin. 329/2287US. ***Systems and Methods for the detection, Classifications and Diagnosis of Schizophrenias*** (paper clip) United States of America. 28/08/2014. WUSM/UGR