**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 | JESÚS RAMÓN | | |
| Family name | ABOAL VIÑAS | | |
| Gender (*) | Male | Birth date | 07/08/1970 |
| ID number | 33288734Y | | |
| e-mail | jesusramon.aboal@usc.es | URL Web | |
| Open Researcher and Contributor ID (ORCID) (*) | | 0000-0001-8310-2907 | |

*(*) Mandatory*

### A.1. Current position

| | | | |
|---|---|---|---|
| Position | Full Professor | | |
| Initial date | 27/04/2022 | | |
| Institution | Universidad de Santiago de Compostela (USC) | | |
| Department/Center | Ecology Unit \| Cross-Research in Environmental Technologies | | |
| Country | Spain | Teleph. number | 881 813 311 |
| Key words | Biomonitoring, Ecotoxicology, Contamination, Pollution, Heavy metals, PAHs | | |

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

| Period | Position/Institution/Country/Interruption cause |
|---|---|
| 1998-2001 | Researcher/ USC/ Spain/ promotion |
| 2001-2005 | Lecturer/ USC/ Spain/ promotion |
| 2006-2021 | Associate Professor/ USC/ Spain/ promotion |

### A.3. Education

| PhD, Licensed, Graduate | University/Country | Year |
|---|---|---|
| Bachelor's degree in Biological Sciences | USC / España | 1993 |
| PhD in Biological Sciences | Universidad de La Laguna / Spain | 1998 |

## Part B. CV SUMMARY

I graduated in Biological Sciences, specializing in Plant Biology, at USC in 1993. During the following five years I worked in various environmental consultancies for different administrations including ICONA and the Canarian Government's Ministry of the Environment. Among the work I did, the main one was the planning and management of ENP, participating in the drafting of several plans and decrees. I combined this work with my doctoral thesis in the Ecophysiology Group of the ULL. That same year I joined USC as a researcher. I am currently a full professor in the Ecology Area of USC and researcher in the Cross-Research in Environmental Technologies (CRETUS).

My main line of research has been ecotoxicology, investigating aspects related to active and passive biomonitoring. Within this line I have worked on the optimization of the methodologies used, mainly in relation to the variability in the pollutant loading process (heavy metals, especially Hg and organic compounds, mainly PAHs). This work has made our group a world reference in biomonitoring with terrestrial and aquatic bryophytes and brown macroalgae (although we have also worked with other organisms). In recent years, my work has focused mainly on intertidal systems, where I am also investigating Hg biomagnification processes in their trophic chains. All this was has resulted in the implementation of an Environmental Specimen Bank (which currently has more than 40,000 samples deposited). In addition, I have paid special attention to the study of the subcellular location of metals, in order to evaluate their toxicity. On the other hand, I continue to work on the ecology of the Canarian laurel forest (biogeochemical cycles and ecological succession). **All this activity has resulted in 130 articles published in JCR journals, with 71 JCR articles (30% in D1 and 70% in Q1) in the**

**last 10 years that have received 2332 citations (2911 in total), currently reaching an H-index of 31 (Scopus) and a normalized index of 1.7 (2015-2018)**. Most of these papers include international collaborations. I have also contributed to the dissemination of this work through more than twenty communications to national and international congresses. As for the development in competitive projects, **in the last decade, I participated in 3 national competitive projects (one as PI), 5 autonomous projects (one as PI) and 1 European project**.
Regarding technological development activities, **I am the inventor of a European patent** (biotechnological tool for air quality control) **and I have registered a scientific and technological service with a Guarantee Mark Registration**.
In relation to dissemination, **I have participated 4 years in the FECYT Summer Science Campuses and in training courses for teachers in vocational training centers** and **I collaborated with companies** (Novotec, Alcoa Europe, etc.) **and public administrations** (Xunta de Galicia, Government of La Rioja, etc.) **through more than a dozen contracts and agreements under art. 83 of the LOU**.
**During the past 10 years, I co-directed 6 doctoral theses with a remarkable scientific production averaging 11 JCR publications**, almost all of them signed as first authors. **All of them have obtained outstanding cum laude and European or international doctoral mention and more than a third of them obtained the Extraordinary Prize**. Especially for women (all 6 theses), this training has made it possible for them to enter the labor market completely, with one exception (by personal choice), having been awarded highly competitive postdoctoral fellowships and contracts (Marie Curie, JC-F, JC-I, María Zambrano, etc.) in prestigious centers in different countries (USA, Portugal, Vienna, Japan, Chile, etc.). Some of them have already obtained permanent positions as researchers and others have been inserted in different environmental companies. **In 2009 I was the promoter of the company "Biovia Consultor Ambiental S.L.", a technology-based company and spin-off of the University of Santiago de Compostela**, of which I was a partner until 2020. Besides acting as reviewer of more than 145 manuscripts for about thirty JCR scientific journals, **I am currently a member of the editorial boards of two: Sci. Tot. Environ. (ed. Elsevier) and Water (ed. MDPI)**. In relation to the evaluation of researchers, I highlight the intense work done in the last 6 years in the Committee of CC. Experimental Sciences Committee of the PEP of ANECA, of which I was chairman, having also acted as evaluator of 1800 dossiers (more than 750 researchers). I have also cooperated as evaluator of research projects of the Spanish AEI, Austrian Science Fund (FWF), Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT, Chile), etc.

## Part C. RELEVANT MERITS

### C.1. Publications


1. Vázquez-Arias, A., Pacín, C., Ares, A., Fernández, A. Aboal, J.R. (2023) Do we know the cellular location of heavy metals in seaweed? An up-to-date review of the techniques. Science of the Total Environment 856:159215. https://doi.org/10.1016/j.scitotenv.2022.159215
2. Aboal, J.R., Pacín, C., García-Seoane, R., Varela., Z., González, A.G., Fernández, A. (2023) Global decrease in heavy metal concentrations in brown algae in the last 90 years. Journal of Hazardous Materials 445:130511. https://doi.org/10.1016/j.jhazmat.2022.130511
3. García-Seoane, R., Fernández, J.A., Boquete, T., Aboal, J.R. (2021). Analysis of intra-thallus and temporal variability of trace elements and nitrogen in *Fucus vesiculosus*: sampling protocol optimization for biomonitoring. Journal of Hazardous Materials 412: 125268. DOI: j.jhazmat.2021.125268
4. López-Pedrouso, M., Varela, Z., Franco, D., Fernández, J.A., Aboal, J.R. Can proteomics contribute to biomonitoring of aquatic pollution? A critical review. Environmental Pollution 267:115473. https://doi.org/10.1016/j.envpol.2020.115473
5. García-Seoane, R., Aboal, J.R., Fernández, J.A. (2020). Optimal number of *Fucus vesiculosus* subsamples to differentiate between sites affected by distinct levels of heavy metal contamination. Aquatic Toxicology 222: 105465. DOI: j.aquatox.2020.105465

6. García-Seoane, R., Aboal, J.R., Boquete, T., Fernández, J.A. (2020). Phenotypic differences in heavy metal accumulation in populations of the brown macroalgae *Fucus vesiculosus*: a transplantation experiment. Ecological Indicators 111: 105978. DOI: j.ecolind.2019.105978
7. García-Seoane, R., Fernández, J.A., Varela, Z., Real, C., Boquete, M.T., Aboal, J.R. (2019). Sampling optimization for biomonitoring metal contamination with marine macroalgae. Environmental Pollution 255, 113349. DOI: j.envpol.2019.113349
8. García-Seoane, R., Fernández, J.A., Boquete, T., Aboal, J.R. (2019). Application of macroalgae analysis to assess the natural variability in selected pollution concentrations (N and Hg), and to detect sources of it in coastal environments. Science of the Total Environment 650 (1): 1403-1411. DOI: j.scitotenv.2018.09.156
9. García-Seoane, R., Aboal, J.R., Boquete, M.T., Fernández, J.A. (2018). Biomonitoring coastal environments with transplanted macroalgae: a methodological review. Marine Pollution Bulletin 135, 988-999. DOI: j.marpolbul.2018.08.027
10. García-Seoane, R., Fernández, J.A., Villares, R., Aboal, J.R. (2018). Use of macroalgae to biomonitor pollutants in coastal waters: optimization of the methodology. Ecological Indicators 84: 710-726. DOI: j.ecolind.2017.09.015

**C.2. Congress**

1. Standardization of the technique for biomonitoring metal pollution by using raptor feathers. García-Seoane, R., Varela, Z., Debén, S., **Aboal, J.R** y Fernández, J.A. Santiago de Compostela, 19-22 de junio de **2018**, ISEAC-40 International Conference on Environmental & Food Monitoring. **Póster**.
2. Size does matter: morphology, sexual expression and sex ratios in Pseudoscleropodium purum across Europe. Boquete, M.T., **Aboal, J.R**, Branquinho, C., Calleja, J., Cronberg, N., Estébanez-Pérez, B., Fernández, J.A., González-Mancebo, J.M., Leblond, S., Martínez-Abaigar, J., Medina, N., Núñez-Olivera, E., Patiño, J., Retuerto., R., Venderpoorten, A., Zechmeister, Varela, Z. Barcelona, 4-7 de febrero de 2019, 1st Meeting of the Iberian Ecological Society & XIV AEET Meeting Ecology an integrative science in the Anthropocene. Póster.
3. Relationship between the concentration of polycyclic aromatic hydrocarbons in freshwater samples and the aquatic moss Fontinalis antipyretica. Carrieri, V., Fernández, J.A., Aboal, J.R., De Nicola, F. Ferrara, 10-12 de septiembre de 2019, XXIX Congreso de la Sociedad Italianade Ecología (SItE). Póster.
4. Use of mosses for heavy metal removal from the environment. Párez-Rial, A., Gómez, T., Antelo, J., Fernández, J.A., Aboal, J.R., Fiol, S. Wuhan (China) 14-17 de mayo de 2021, IAP. Póster. Obtuvo el The 2021 IAP Poster Prize.
5. Understanding the composition and concentration of cuticular waxes of Prunus cerasifera var. pissardi. Celeiro, M., Pérez Gomes-Ortigao, S., Aboal, J.R., García-Jares, C. 30 de junio-2 de julio de 2021, ExTech XXIII, 23rd International Symposium on Advances in Extraction Technologies. Póster.

**C.3. Research projects**

1. Project reference: CTM2016-70578-P
   Title: Standardisation and optimisation of the use of bryophytes for passive and active biomonitoring of inland water quality. Development of protocols.
   Funding Entity: Ministerio de Ciencia e Innovación, Programa Nacional de Proyectos de Investigación Fundamental
   Principal Investigator: J. Aboal Viñas
   Period 01/01/2016 - 31/12/2018. Funding received: 160.083 €
2. Project reference: (2010-PI036) Ref.282952
   Title: Creating and testing a method for controlling the air quality based on a new biotechnological tool. Use of a devitalized moss clone as passive contaminant sensor (MOSSCLONE)
   Funding Entity: EU Comission. Collaborative Project. FP7- ENV.2011.3.1.9-1: Eco-innovation! (part of the EcoInnovation Call).

Principal Investigator: J. Ángel Fernández Escribano
Role: researcher
Period: 01/04/2012 - 31/03/2015. Funding received: 423.117,28 €

3. Project reference: CTM2011-30305
Title: Active biomonitoring of air quality with terrestrial mosses: standardisation and optimisation of methodology
Principal Investigator: J. Ángel Fernández Escribano
Role: researcher
Funding Entity: Ministerio de Ciencia e Innovación; Programa Nacional de Proyectos de Investigación Fundamental
Period: 01/01/2012 - 31/12/2014. Funding received: 130.680,00 €

4. Project reference: 10MDS200001PR
Title: Biomonitoring air quality with terrestrial mosses: validation of the sequential elution technique using electron microscopy and histochemistry.
Principal Investigator: Jesús R. Aboal Viñas
Funding Entity: Xunta de Galicia. PGIDT - 2010
Period: 14/12/2010 - 14/12/2013. Funding received: 29.827,55 €

5. Project reference: CN 2012/028
Title: ECOTOX. Consolidating and structuring competitive research units
Principal Investigator: Alejo Carballeira Ocaña
Role: researcher
Funding Entity: Xunta de Galicia. Consolidación e Estructuración de unidades de investigación competitivas. Consellería de Cultura, Educación e Ordenación Universitaria
Period: 01/09/2012 - 31/10/2015. Funding received: 200.000,00 €

**C.4. Contracts, technological or transfer merits**, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

Title: Research services on biomonitoring of heavy metal contamination in the metropolitan area of Logroño.
Principal Investigator: Javier Martínez Abaigar
Role: researcher
Funding Entity: Consejería de Agricultura, Gandería y Medio Ambiente del Gobierno de La Rioja. Period: 09/01/2018 – 09/09/2018. Funding received: 41.000 €

2. Title: Characterisation and analysis within the regional network of biomonitoring of heavy metals in La Rioja. Period 2014-2015
Principal Investigator: Javier Martínez Abaigar
Role: researcher
Funding Entity: Consejería de Turismo, Medio Ambiente y Política Territorial del Gobierno de La Rioja. Period: 31/05/14 - 15/12/2015. Funding received (en euros): 32.313,05 €

3. Title: ALCOA Europe- Various valuation studies on the land near the company's plant in San Cibrao (2012) (2012-CE218).
Principal Investigator: Alejo Carballeira Ocaña
Role: researcher
Funding Entity: Aluminio Español S.A. Period: 27/07/12 - 31/12/2012. Funding received: 22.870,00 €

4. European Patent nº EP3076171-A1
Title: Passive contaminant sensor device used to sense air pollutants comprising polycyclic aromatic hydrocarbons or heavy metals or their compounds, comprises axenic devitalized moss clone.
Autores: Reski, R., E. Decker, A. Beike, (…) & H.G. Zechmeister (25 co-authors in alphabetic order). Date of award: 06/10/2016