Orbital
The electronic journal of chemistry

the electronic journal of chemistry

Orbital Bio | http://dx.doi.org/10.17807/orbital.v18i1.24693

Obituary for Dr. Flávia Vasconcelos de Mello: A Distinguished Young Researcher and Key Contributor to the Understanding of Environmental Contaminants' Fate and Impacts in Marine Ecosystems

Janeide Padilha*[a], Yago Guida[b], Adan Lino[c], Dhoone Menezes-Sousa[b,c], Sara C. Cunha[d], José O. Fernandes[d], Juliana Souza-Kasprzyk[e], Thaís Paiva[f], José E. Celis[g], Winfred Espejo[h], Fabiola H. S. Fogaça[i], Raquel Nepomuceno[b], Mariana B. Alonso[b], and João Paulo M. Torres[b]

The scientific community mourns the untimely passing of Dr. Flávia Vasconcelos de Mello, an exceptional young researcher whose work helped to expand our understanding of environmental contamination and its impacts on aquatic ecosystems and human health.

The scientific community mourns the untimely passing of Dr. Flávia Vasconcelos de Mello, an exceptional young researcher whose work helped to expand our understanding of environmental contamination and its impacts on aquatic ecosystems and human health.

Flávia devoted her career to studying persistent organic pollutants (POPs), emerging contaminants, and potential toxic elements mainly in remote environments, integrating trophic ecology, analytical chemistry, and risk assessment with both passion and scientific rigor. She received her Bachelor's, Master's, and PhD in Ecology from the Federal University of Rio de Janeiro (*Universidade Federal do Rio de Janeiro – UFRJ*), where she also served as a teaching assistant in Biophysics. Her master's dissertation, entitled "Inter-specific patterns in the levels and profiles of classical and emerging persistent organic pollutants in Antarctic seabirds," focused on understanding species-specific contamination dynamics in Antarctic avifauna and provided a foundation for her later investigations into pollutant pathways and ecological interactions in remote marine environments. Her doctoral research, entitled "Organohalogenated compounds and trophic ecology of reproductive colonies of brown boobies (*Sula leucogaster*) in Brazilian islands," further explored this theme, providing important insights into the contamination pathways of seabirds and their foraging ecology along the Brazilian coast.

In addition to her focus on POPs and emerging contaminants, Dr. Mello has made significant contributions to the study of trace elements, notably through her research at a key site in the city of Rio de Janeiro, Brazil. She gathered fundamental data to assess environmental risks to both the ecosystem and human health [1]. Her work has helped to guide public policy and assist government institutions in managing the region's water resources, providing essential information for environmental protection and the population's quality of life.

Her academic journey started at the Laboratório de Micropoluentes Jan Japenga and Laboratório de Estudos

[a]CBMA – Centre for Molecular and Environmental Biology/ARNET-Aquatic Research Network/ IB-S, Institute of Science and Innovation for Bio-Sustainability, Department of Biology, University of Minho, Campus Gualtar, 4710-057 Braga, Portugal. [b]Laboratório de Micropoluentes Jan Japenga, Instituto de Biofísica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro, Cidade Universitária, 21941-902, Rio de Janeiro, RJ, Brazil. [c]Laboratório de Estudos Ambientais Olaf Malm, Instituto de Biofísica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro, Cidade Universitária, 21941-902, Rio de Janeiro, RJ, Brazil. [d]Laboratório de Bromatologia e Hidrologia, REQUIMTE/Faculty of Pharmacy, University of Porto, 4050-313 Porto, Portugal. [e]Department of Analytical Chemistry, Faculty of Chemistry, Adam Mickiewicz University, Ul. Uniwersytetu Poznańskiego 8, 61-614 Poznań, Poland. [f]Laboratório de Limnologia, Ecotoxicologia e Ecologia Aquática. Instituto de Ciências Biológicas. Universidade Federal de Minas Gerais, 31270-90, Belo Horizonte, MG, Brazil. [g]Department of Animal Science, Facultad de Ciencias Veterinarias, Universidad de Concepción, Vicente Méndez 595, Chillán, Chile. [h]Department of Soils and Natural Resources, Facultad de Agronomía, Universidad de Concepción, Vicente Méndez 595, Chillán,Chile. [i] Embrapa Food Technology, 23020-470, Rio de Janeiro, Brazil. *Corresponding author: E-mail: **janeide_padilha@bio.uminho.pt**

Ambientais Olaf Malm (UFRJ), having later expanded to include various international research collaborations. During her exchange at the Consejo Superior de Investigaciones Científicas (CSIC) in Madrid, she strengthened collaborations in environmental chemistry and ecotoxicology. She subsequently conducted multiple postdoctoral researches in Portugal and Brazil, having collaborated with the Network of Chemistry and Technology (REQUIMTE) at the Faculty of Pharmacy of the University of Porto, the Portuguese Institute for the Sea and Atmosphere (IPMA - Lisbon) and, lastly, the Marine and Environmental Sciences Centre (MARE) within the Faculty of Sciences of the University of Lisbon. Throughout these years, her work focused on pharmaceuticals, endocrine disruptors, and mycotoxins in fish, assessing bioaccessibility, bioaccumulation, and human health risks through experimental and analytical approaches [2-8].

Dr. Mello was the author or coauthor of numerous scientific publications in high-impact journals, including Science of the Total Environment, Environmental Research, and Molecules. Her studies on Antarctic seabirds [9], Brazilian coastal ecosystems [6], and European aquaculture species [2] exemplify her integrative and international vision for environmental science. She was also a dedicated science communicator, co-organizing exhibitions and outreach events about marine biodiversity. In addition, she has contributed to the publication of several articles by reviewing research projects and scientific manuscripts for prestigious international journals, including Marine Pollution Bulletin and Ornithologia. She collaborated on international research projects, consistently making valuable contributions. Notably, she participated in the Instituto Antártico Chileno (INACH) project RG-02-22, *"Presence and Impacts of Per- and Polyfluoroalkyl Substances (PFAS) on Remote and Cold Environments: Bioaccumulation and Trophic Transfer on Antarctic Fauna"*, where she provided significant input to the scientific articles resulting from the project [10, 11].

Above all, Flávia embodied the spirit of a field scientist-explorer (Figure 1). She ventured to almost all remote Brazilian oceanic islands and to the Antarctic Peninsula on scientific expeditions to sample endemic species under harsh conditions — from cliff-nest colonies to icy, wind-swept shores — because she was committed to protecting such pristine ecosystems based on sound scientific evidence.

Throughout her career, Flávia received several distinctions, including the FAPERJ "Nota 10" fellowship, the Best Poster Award at the VI International Workshop on Pollutants in the Environment, and academic excellence awards from the Brazil-United States Institute (*Instituto Brasil–Estados Unidos*).

Beyond her remarkable scientific achievements, Flávia was admired for her kindness, humility, and enthusiasm. She inspired colleagues and students with her intellectual honesty, curiosity, generosity, and unwavering commitment to science with purpose.

Dr. Mello's promising and distinguished career ended abruptly at the age of 36, representing a profound loss to the fields of marine pollution, ecotoxicology, and environmental health. Her legacy lives on through the knowledge she produced and the collaborations she fostered. She will be deeply missed by her family, friends, colleagues, and all those lives she touched in the 50 countries she visited, as well as by the global community of scientists committed to protecting the ocean and ecosystems she so deeply loved.

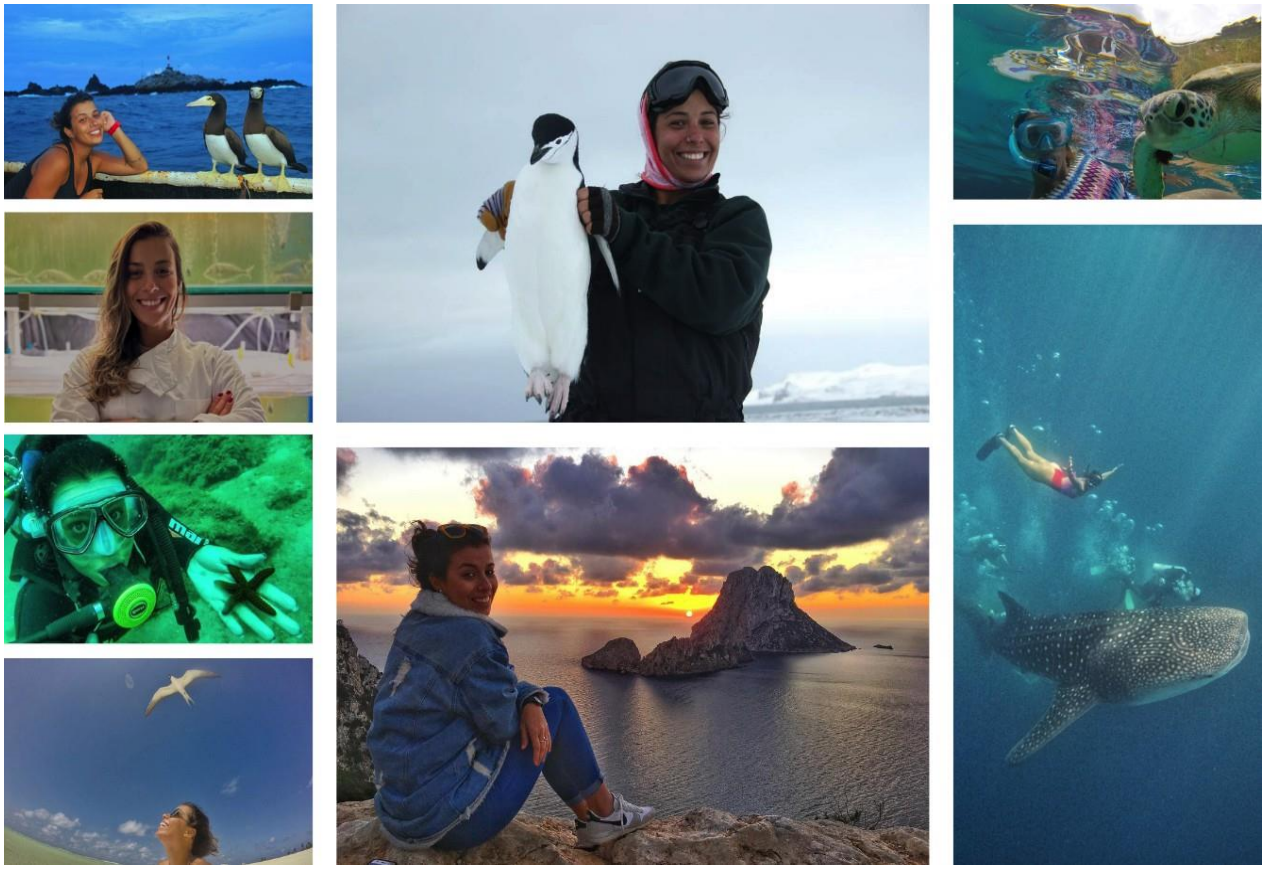

Fig. 1. Dr. Flávia Mello and her love for science, nature, and life. Photos from the places where Flávia lived and worked, highlighting remote regions such as the São Pedro and São Paulo Archipelago and Antarctica.

References and Notes

[1] Mello, F. V.; de Carvalho, G. O.; de Holanda, T. B.; Lino, A. S.; Thomaz Júnior, J. R.; Azevedo, J. P. S.; Torres, J. P. M. *Orbital: Electron. J. Chem.* **2018**, *10*, 327. [Crossref]

[2] Mello, F. V.; Pereira, C.; Özkan, B.; Maulvault, A. L.; Soares, F.; Pousão-Ferreira, P.; Fernandes, J. O.; Cunha, S. C.; Marques, A.; Anacleto, P. *Int. J. Mol. Sci.* **2025**, *26*, 5676. [Crossref]

[3] Mello, F. V.; Silva, P.; Barata, M.; Soares, F.; Pousão-Ferreira, P.; Duarte, M. P.; Valente, L. M. P.; Marques, A.; Anacleto, P. *Food Res. Int.* **2025**, *213*, 116554. [Crossref]

[4] Mello, F. V.; Marmelo, I.; Fogaça, F. H. S.; Lafont Déniz, F.; Alonso, M. B.; Maulvault, A. L.; Torres, J. P. M.; Marques, A.; Fernandes, J. O.; Cunha, S. C. *J. Sci. Food Agric.* **2024**, *104*, 5964. [Crossref]

[5] Mello, F. V.; Cunha, S. C.; Fernandes, J. O.; Maulvault, A. L.; Pousão-Ferreira, P.; Soares, F.; Marques, A.; Anacleto, P. *Molecules* **2022**, *27*, 4873. [Crossref]

[6] Mello, F. V.; Cunha, S. C.; Fogaca, F. H. S.; Alonso, M. B.; Torres, J. P. M.; Fernandes, J. O. *Sci. Total Environ.* **2022**, *803*, 149744. [Crossref]

[7] Cunha, S. C.; Menezes-Sousa, D.; Mello, F. V.; Miranda, J. A.; Fogaca, F. H.; Alonso, M. B.; Torres, J. P. M.; Fernandes, J. O. *Environ. Res.* **2022**, *2010*, 112886. [Crossref]

[8] Mello, F. V.; Kasper, D.; Alonso, M. B.; Torres, J. P. M. *Sci. Total Environ.* **2020**, *717*, 137000. [Crossref]

[9] Mello, F. V.; Roscales, J. L.; Guida, Y. S.; Menezes, J. F. S.; Vicente, A.; Costa, E. S.; Jiménez, B.; Torres, J. P. M. *Sci. Total Environ.* **2016**, *573*, 1380. [Crossref]

[10] Celis, J. E.; Espejo, W.; Bervoets, L.; Padilha, J.; Mello, F. V.; Sandoval, M.; Chiang, G.; Groffen, T. *Mar. Pollut. Bull.* **2025**, *219*, 118300. [Crossref]

[11] Celis, J. E.; Espejo, W.; Groffen, T.; Bervoets, L.; Padilha, J.; Mello, F. V.; Sandoval, M.; Chiang, G. *Sci. Total Environ.* **2025**, *959*, 178333. [Crossref]

How to cite this article

Padilha, J.; Guikda, Y.; Lino, A.; Menezes-Sousa, D.; Cunha, S. C.; Fernandes, J. O.; Souza-Kasprzyk, J.; Paiva, T.; Celis, J. E.; Espejo, W.; Fogaça, F. H. S.; Nepomuceno, R.; Alonso, M. B.; Torres, J. P. M. *Orbital: Electron. J. Chem.* **2026**, *18*, 92. DOI: **http://dx.doi.org/10.17807/orbital.v18i1.24693**