# Vanessa Steindorf

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## EMPLOYMENT

- CUNEF Universidad, Madrid, Spain. 01/2026 to present. Dept. of Quantitative Methods, Assistant Professor on Tenure Track.
- Basque Center for Applied Mathematics (BCAM), Bilbao, Spain. 07/ 2021 to 11/2025. Postdoctoral fellow.
- Instituto Mauá de Tecnologia (IMT), São Caetano do Sul, Brazil. 08/2020 to 06/2021. Coordination assistant (Assistant professor).
- Amil Assistência Médica Internacional. Ltda, São Paulo, Brazil. 04/ 2020 to 06/2020. Consultant. Provided advice on hospitalization numbers due to COVID-19 infections.
- Instituto Federal de Santa Catarina, São Miguel do Oeste, Brazil. 09/2019 to 12/2019. Higher Education teacher in Basic, Technical, and Technological Education.
- York University (YorkU), Toronto, Canada. 04/ 2017 to 06/2017. Visiting researcher

## EDUCATION

- Doctor in Science. Area: Applied Mathematics. University of São Paulo (USP), São Paulo, Brazil. 08/2019.
- Master degree in applied mathematics. Federal University of ABC (UFABC), Santo André, Brazil. 01/2015.
- License in Mathematics. Federal University of Santa Maria (UFSM), Santa Maria, Brazil. 01/2013.

## FIELDS OF INTEREST

Differential equations, epidemiology, infectious diseases, data and numerical analysis

## PUBLICATIONS

Guerrero, B. V.; Steindorf, V.; Blasco, R.; et al.: “Assessing the Spatio-Temporal Risk of Aedes-Borne Arboviral Diseases in Non-Endemic Regions: The Case of Northern Spain,” *PLOS Neglected Tropical Diseases*, 19(7): e0013325, 2025.

Steindorf, V.; Mariyam, H. K. B.; Cevidanes, A.; et al.: “Forecasting invasive mosquito abundance in the Basque Country, Spain using machine learning techniques,” *Parasite & Vectors*, 18: 109, 2025.

Domoshnitsky, A.; Volinsky, I.; Biton, S.; Steindorf, V.: “Solutions’ Estimates for Integro-Differential Equations in Epidemiological Modeling,” *Mathematical Methods in the Applied Sciences*, 0: 1–11, 2025.

Steindorf, V.; Srivastav, A. K.; Stollenwerk, N.; et al.: “Beyond the biting – limited impact of explicit mosquito dynamics in dengue models,” *BMC Infectious Diseases*, 24: 1090, 2024.

Steindorf, V.; Oliva, S.; Stollenwerk, N.; Aguiar, M.: “Symmetry in a multi-strain epidemiological model with distributed delay as a general cross-protection period and disease enhancement factor,” *Communications in Nonlinear Science and Numerical Simulation*, 128: 107663, 2024.

Aguiar, M.; Anam, V.; Steindorf, V.; et al.: “Mathematical models for dengue fever epidemiology: A 10-year systematic review,” *Physics of Life Reviews*, 40: 65–92, 2022.

Steindorf, V.; Srivastav, A. K.; Stollenwerk, N.; et al.: “Modeling secondary infections with temporary immunity and disease enhancement factor: Mechanisms for complex dynamics in simple epidemiological models,” *Chaos, Solitons & Fractals*, 164: 112709, 2022.

Steindorf, V.; Oliva, S.; Wu, J.: “Cross immunity protection and antibody-dependent enhancement in a distributed delay dynamic model,” *Journal of Mathematical Biosciences and Engineering*, 19(3): 2950–2984, 2022.

Steindorf, V.; Maidana, N.: “Modeling the Spatial Spread of Chagas Disease,” *Bulletin of Mathematical Biology*, 81: 1687–1730, 2019.

## SELECTED ACADEMIC HONOURS AND GRANTS

Outstanding scholars in Mathematical Analysis and Applications. ISEP, Portugal, 2022.

## SELECTED PRESENTATIONS

### CONFERENCES

- Dynamical Systems Applied to Biology and Natural Sciences. Italy, 2025.
- Mathematical modeling of epidemiological dynamics. University of Le Havre. France, 2024.
- Dynamical Systems Applied to Biology and Natural Sciences. Portugal, 2024.

### SEMINARS

- Postgraduation program in Applied Mathematics. University of São Paulo. Brazil, 2025.
- Drakhlin's Seminar on Functional Differential Equations. Ariel University. Israel, 2025.
- International Students Project Programme (ISPP) Seminar series - 2024. Faculty of Education, Phuket Rajabhat University, Thailand, 2024.