



## MARIE SKŁODOWSKA-CURIE POSTDOCTORAL FELLOWSHIPS 2024

### EXPRESSION OF INTEREST FOR HOSTING MARIE CURIE FELLOWS

#### HOST INSTITUTION

CICS.NOVA, FCT NOVA

#### RESEARCH GROUP AND URL

Education, Knowledge and Culture

#### SUPERVISOR (NAME AND E-MAIL)

Helena Rocha, [hcr@fct.unl.pt](mailto:hcr@fct.unl.pt)

#### SHORT CV OF THE SUPERVISOR

Helena Rocha is a professor in the Mathematics Department of the Faculty of Science and Technology of the NOVA University of Lisbon (NOVA FCT) and member of the research center CICS.NOVA, with a degree in Mathematics from the Faculty of Sciences of the University of Lisbon and a PhD in Education, in the area of Didactics of Mathematics, from the Institute of Education of the University of Lisbon.

Her research interests are centered on the mathematics teacher, with a special focus on knowledge and professional development in the context of technology integration. In this context, she leads the TecTeachers project, which focuses on professional knowledge to teach with technology. Author of several book chapters and articles published in national and international journals; she supervises a group of master and PhD students; and organizes regular seminars devoted to technology integration. She is also coordinator of the Master's in Mathematics Teaching; associate director of journal *Quadrante*; member of the editorial board of the journal *Research in Mathematics Education*; and editor of the journal *Education and Mathematics*. She was an invited researcher in several international universities, such as École Normale Supérieure de Lyon, France (2016-2017); Universität Bonn, Germany (2018/6-2018/7); Amsterdam University of Applied Sciences, The Netherlands (2020/3-2020/4, adapted to virtual due to the Covid lockdown); and Università degli Studi di Bari Aldo Moro, Italy (2023/11-2023/12). In addition to her research and teaching activities, she is also a member of evaluation panels related to the allocation of research fundings and a member of international programme committees of several conferences.

#### 5 SELECTED PUBLICATIONS

Sacristán, A., Faggiano, E., Santacruz-Rodríguez, M., & Rocha, H. (2024). Policies and implementations for technology use in mathematics education: perspectives from around the world. In B. Pepin, G. Gueudet, & J. Choppin (Eds.), *Handbook of digital resources in mathematics education*. Cham, Switzerland: Springer. [https://doi.org/10.1007/978-3-030-95060-6\\_52-1](https://doi.org/10.1007/978-3-030-95060-6_52-1)

Rocha, H. (2023). Analyzing teachers' knowledge based on their approach to the information provided by technology. *European Journal of Science and Mathematics Education*, 11(1), 132-145. <https://doi.org/10.30935/scimath/12522>

Faggiano, E., Rocha, H., Sacristan, A., & Santacruz-Rodríguez, M. (2021). Towards pragmatic theories to underpin the design of teacher professional development concerning technology use in school mathematics. In A. Clark-Wilson, A. Donevska-Todorova, E. Faggiano, J. Trgalova & H-G. Weigand (Eds.) *Mathematics Education in the Digital Age: Learning, Practice and Theory* (pp. 42-68). Oxford, UK: Routledge.

Rocha, H. (2020). Using tasks to develop pre-service teachers' knowledge for teaching mathematics with digital technology. *ZDM Mathematics Education*, 52(7), 1381-1396. <https://doi.org/10.1007/s11858-020-01195-1>

Viseu, F. & Rocha, H. (2020). Interdisciplinary technological approaches from a mathematics education point of view. In L. Leite, E. Oldham, A. Afonso, F. Viseu, L. Dourado, & H. Martinho (Eds.), *Science and mathematics education for 21st century citizens: challenges and ways forward* (pp. 209-229). New York, USA: Nova Science Publishers.

## PROJECT TITLE AND SHORT DESCRIPTION

Teachers' interdisciplinary knowledge

The interdisciplinary approach has been assumed as having the potential to promote students learning and an integrated development of skills. However, the implementation of this approach has proved to be complex and challenging for the teachers. Several factors have been pointed as the cause for the difficulties identified. Some factors are related to the structure of the school, organized in a disciplinary way, but some other factors are related to the teachers and their professional knowledge. The goal of this project would be to study and characterize the teachers' knowledge required to teach in an interdisciplinary approach. Mathematics and technology will be assumed as an important part of this interdisciplinarity.

## SCIENTIFIC AREA WHERE THE PROJECT FITS BEST\*

Social Sciences and Humanities (SOC)

**\*Scientific Area where the project fits best** – Please select/indicate the scientific area according to the panel evaluation areas: Chemistry (CHE) • Social Sciences and Humanities (SOC) • Economic Sciences (ECO) • Information Science and Engineering (ENG) • Environment and Geosciences (ENV) • Life Sciences (LIF) • Mathematics (MAT) • Physics (PHY)