

# CURRICULUM VITAE

(DECEMBER 2022)



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**CURRENT POSITION:** Professor of Science Education *and* Director of the Science Teaching Laboratory

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## EDUCATION

- PhD. in Science Education, University of Kiel, Germany (2004).  
Title of the thesis: *“The interplay of chance and determinism in nonlinear systems. Educational analysis and learning processes”*
- Master in Science Education, University of Athens, Department of Primary Education, Greece (1998)
- B. Sc. in Chemistry, Department of Chemistry, University of Athens, Greece (1992)
- A.A. Pedagogical Academy of Larisa, Greece (1986)

## RESEARCH INTERESTS

- Educational Reconstruction of modern science topics (Climate Change, Nanotechnology, Nonlinear Systems, Quantum Mechanics)
- Pre- and in-service teacher training in Science Education (in school & out of school learning environments)
- Digital Technologies in Science Education
- STEM Education
- Socioscientific Issues in Science Education

## **TEACHING EXPERIENCE**

- Undergraduate and Postgraduate courses focused on science teaching
- Courses focused on science teaching in Teachers' Professional Development Programs

## **PUBLICATIONS**

Book: 1

Articles in Journals: 27

Collective Volumes (Contributions): 3

Collective Volumes (Edited): 6

Articles in International Conferences: 35

Articles in National Conferences (Greece and German): 76

## **SELECTED PUBLICATIONS**

### **A. Publications in International Journals**

1. Kokolaki, A. & Stavrou, D. (2022). Pre-Service Primary Teachers Develop Teaching Artifacts on Contemporary Socioscientific Issues. *Journal of Science Teacher Education*. 1-20. <https://doi.org/10.1080/1046560X.2022.2078546>
2. Michailidi, E. & Stavrou, D. (2022). Supporting the implementation of a nanotechnology teaching-learning sequence through post-induction science teacher mentoring. *International Journal of Science Education*, 44, 2, 297-323. <https://doi.org/10.1080/09500693.2021.2024914>
3. Giannakoudaki K. & Stavrou, D. (2022). Guided school visits to a research center: teachers' and staff's perspectives. *International Journal of Physics and Chemistry Education* 14(1), 11-20., <https://doi.org/10.51724/ijpce.v14i1.241>
4. Michailidi, E. & Stavrou, D. (2022). Mentoring in-service teachers on implementing innovative teaching modules. *Teaching and Teacher Education*, 105, 103414 <https://doi.org/10.1016/j.tate.2021.103414>
5. Metaxas, I. Michailidi, E., Stavrou, D. & Pavlidis, I.V. (2021). Educational reconstruction of size-depended-properties in nanotechnology for teaching in tertiary education. *Chemistry Teacher International*, 3, 4, 413-422. <https://doi.org/10.1515/cti-2021-0011>
6. Mandrikas, A., Michailidi, E. & Stavrou, D. (2021). In-service teachers' needs and mentor's practices in applying a teaching-learning

- sequence on Nanotechnology and Plastics in Primary Education. *Journal of Science Education and Technology*, 30, 630-641 <https://doi.org/10.1007/s10956-021-09908-1>
7. Velentzas A. & Stavrou, D. (2020). Exploring Fullerenes and Nanotubes in the classroom. *Chemistry Teacher International*, 3, 1, 45-55 <https://doi.org/10.1515/cti-2020-0003>
  8. Sgouros, G. & Stavrou, D. (2019). Teachers' professional development in Nanoscience and nanotechnology in the context of a Community of Learners. *International Journal of Science Education*, 41, 15, 2070-2093. <https://doi.org/10.1080/09500693.2019.1659521>.
  9. Mandrikas, A., Michailidi, E., & Stavrou, D. (2019). Teaching nanotechnology in primary education. *Research in Science & Technological Education*, 38, 4, 377-395 <https://doi.org/10.1080/02635143.2019.1631783>.
  10. Iliaki, G., Velentzas, A., Michailidi, E., & Stavrou, D. (2019). Exploring the music: a teaching-learning sequence about sound in authentic settings. *Research in Science & Technological Education*, 37, 2, 218-238 <https://doi.org/10.1080/02635143.2018.1526170>
  11. Stavrou, D., Michailidi, E. & Sgouros, G. (2018). Development and Dissemination of a Teaching Learning Sequence on Nanoscience and Nanotechnology in a context of Communities of Learners *Chemistry Education Research and Practice*, 19, 4, 1065-1080 <https://doi.org/10.1039/c8rp00088c>
  12. Mandrikas, A., Stavrou, D., Halkia, K. & Skordoulis, C. (2018). Preservice Elementary Teachers' Study Concerning Wind on Weather Maps. *Journal of Science Teacher Education*. 29, 1, 65-82, <https://doi.org/10.1080/1046560X.2017.1423458>
  13. Mandrikas, A., Stavrou, D. & Skordoulis, C (2017). Teaching air pollution in an authentic context. *Journal of Science Education & Technology*, 26, 2, 238-251 <https://doi.org/10.1007/s10956-016-9675-8>
  14. Mandrikas, A., Stavrou, D. & Skordoulis, C (2017). A teaching-learning sequence about weather map reading. *Physics Education*, 52, 045007 (10pp) <https://doi.org/10.1088/1361-6552/aa670f>
  15. Stavrou, D., Michailidi, D., Sgouros, G., & Dimitriadi, K. (2015). Teaching high-school students nanoscience and nanotechnology. *International Journal on Math, Science and Technology Education (LUMAT)*, 3, 4, 501-511 <https://doi.org/10.31129/lumat.v3i4.1019>
  16. Stavrou, D. & Duit, R. (2014). Teaching and Learning the Interplay Between Chance and Determinism in Nonlinear Systems. *International*

*Journal of Science Education*, 36, 3, 506-530,  
<http://dx.doi.org/10.1080/09500693.2013.802056>

17. Skordoulis, C., Toliass, V. Stavrou, D., Karamanos, K. & Gkiolmas, A. (2014). Teaching Chaos with a Pendulum to Greek Secondary School Students. *Advances in Systems Science and Application*, 14, 2, 158-169, <https://ijassa.ipu.ru/index.php/ijassa/article/view/159>
18. Stavrou, D., Assimopoulos, S. & Skordoulis, C. (2013). A unit on deterministic chaos for student teachers. *Physics Education*, 48, 3, 355-359. <http://iopscience.iop.org/0031-9120/48/3/355>
19. Gkiolmas, A., Karamanos, K, Chalkidis,, A., Skordoulis, C., Papaconstantinou, M. & Stavrou, D. (2013). Using Simulations of NetLogo as a Tool for Introducing Greek High-School Students to Ecosystemic Thinking. *Advances in Systems Science and Application*, 13, 3, 275-297 <https://ijassa.ipu.ru/index.php/ijassa/article/view/141>
20. Karamanos, K, Gkiolmas, A., Chalkidis, A., Skordoulis, C., Papaconstantinou, M. & Stavrou, D. (2012). Ecosystem Food-webs as Dynamic Systems: Educating Undergraduate Teachers in Conceptualizing Aspects of Food-webs' Systemic Nature. *Advances in Systems Science and Application*, 12, 4, 49-68 <https://ijassa.ipu.ru/index.php/ijassa/article/view/119>
21. Stavrou, D., Duit, R. & Komorek, M. (2008). A teaching and learning sequence about the interplay of chance and determinism in non-linear systems. *Physics Education* 43, (4), 417 – 422. <https://iopscience.iop.org/article/10.1088/0031-9120/43/4/011>
22. Kalkanis, G., Hadzidaki, P. & Stavrou, D. (2003). An instructional model for a radical conceptual change towards quantum mechanics concepts. *Science Education* 87, (2), 257-280. <https://doi.org/10.1002/sce.10033>
23. Hadzidaki, P., Kalkanis, G. & Stavrou, D. (2000). Quantum mechanics: A systemic component of the modern physics paradigm. *Physics Education* 35, (6), 386-392. <https://iopscience.iop.org/article/10.1088/0031-9120/35/6/302>

## **B. Articles in Collective Volumes**

1. Nipyrakis, A. & Stavrou, D. (2022). *Integration of ICT in Science Education Laboratories by Primary Student Teachers*. In: S. Papadakis & M. Kalogiannakis (Eds.). *STEM, Robotics, Mobile Apps in Early Childhood and Primary Education*. Lecture Notes in Educational Technology. (pp. 55-78). Springer, Singapore. [https://doi.org/10.1007/978-981-19-0568-1\\_4](https://doi.org/10.1007/978-981-19-0568-1_4)

2. Sgouros, G. & Stavrou, D. (2019). *Teachers' training in developing nanoscience and nanotechnology teaching modules in the context of a community of learners*. In: McLoughlin, E., Finlayson, O., Erduran, S., Childs, P. (Eds.). *Bridging Research and Practice in Science Education. Contributions from Science Education Research*, vol. 6 (pp. 339 – 356) Springer, Cham. [https://doi.org/10.1007/978-3-030-17219-0\\_21](https://doi.org/10.1007/978-3-030-17219-0_21)
3. Komorek, M., Stavrou, D., & Duit, R. (2003). *Non-linear physics in upper physics classes: Educational Reconstruction as a frame for development and research in a study of teaching and learning basic ideas of nonlinearity*. In: D. Psillos, P. Kariotoglou, V. Tselves, E. Hatzikraniotis, G. Fassoulopoulos, & M. Kallery (Eds.), *Science Education Research in the Knowledge Based Society*, (pp. 269-276). Springer, Dordrecht. [https://doi.org/10.1007/978-94-017-0165-5\\_29](https://doi.org/10.1007/978-94-017-0165-5_29)

## INVITED TALKS

- 9<sup>th</sup> Panhellenic Conference on Science Education and ICT (ENEPHET), Thessaloniki, 8 – 10 May 2015
- European Science Education Research Association (ESERA) Summer School 2014, Kapadokya, TURKEY (24-29 August 2014)
- One-day conference on Science Education for Science Teachers. (Heraklion & Rethymno Crete, 1/11/2011, 3/3/2012, 6/2/2016, 23/6/2016)
- 3<sup>rd</sup> Erasmus Week (21 – 26<sup>th</sup> of May 2017). *Department of Electronic Engineering of TEI of Crete*. STEM Education session (Chania, 25/5/2017)

## RESEARCH PROJECTS

### *Principal Investigator*

- **"STAGE":** *Scientists and Public Engagement* (2022 – 2024), Erasmus+ KA2 EU-Project
- **"STEM DIGITALIS":** *STEM Digital Distance Learning in University Teaching* (2021 – 2023, Coordinator), Erasmus+ KA2 EU-Project  
<https://stemdigitalis-project.eu>
- **"DIGITAL STEM LABS":** *Innovative Schools: Teaching & Learning in DIGITAL STEM LABS* (2021 – 2023) Erasmus+ KA2 EU-Project
- **"IDENTITIES":** *Integrate Disciplines to Elaborate Novel Teaching approaches to InTerdisciplinarity and Innovate pre-service teacher*

*Education for STEM challenges* (2019 – 2022), Erasmus+ KA2 EU-Project  
<https://identitiesproject.eu>

- **IKYDA (2018 – 2020)**: Promoting the exchange and the scientific cooperation between Greece (IKY) and Germany (DAAD). Title of the research project: *"Bridging the gap between formal and informal learning environments"* (Department of Primary Education, University of Crete and Institute of Physics, University of Oldenburg)
- **"IRRESISTIBLE"**: *Including Responsible Research and innovation in cutting Edge Science and Inquiry-based Science education to improve Teacher's Ability of Bridging Learning Environments*. (2013 – 2016). Fp7 Framework EU-Project  
<http://www.irresistible-project.eu>
- *"Primary Student Teachers' Training in Inquiry Based Science Teaching"*, *Start\_Up\_Grant*, Research Account, University of Crete (2013 - 2015)

#### **Member of the Research Team**

- **"CLIMADEMY"**: Climate change teachers' academy (2022 – 2025), ERASMUS+ Teacher Academies EU-Project
- **"GINT"**: Lernen in informellen Räumen [STEM – Learning in out of school contexts]. PhD program: Institute of Physics, University of Oldenburg, Germany (2016 -2020)
- **"Pri\_Sci\_Net"**: *Networking Primary Science Educators as a means to provide training and professional development in Inquiry Based Teaching*. (2011 – 2014), Fp7 Framework EU-Project
- **"Educational Reconstruction of Nonlinear Systems"**, Institute for Science and Mathematics Education (IPN), University of Kiel, Germany (2000- 2004)

#### **CONFERENCE ORGANIZING COMMITTEES**

- Head of the Organizing Committee of the ESERA Summer School 2019, University of Crete, 4 – 9 June 2019
- Head of the Organizing Committee of the 10<sup>th</sup> Panhellenic Conference on Science Education and ICT (ENEPHET), Rethymno, University of Crete, 7-9 April 2017.
- Member of the 7<sup>th</sup> International Conference on Hands-on Science (Vice-President), 25-31 July 2010, Rethymno, The University of Crete, Greece.

## **REVIEW OF ARTICLES**

### ***Journals***

- *International Journal of Science Education (IJSE)*
- Science & Education
- Chemistry Education Research and Practice (CERP)
- Journal of Chemical Education
- Chemistry Teacher International
- *Research and Practice in Math, Science and Technology Education (LUMAT)*

### ***International Conferences***

- *European Science Education Research Association (ESERA)*, (2011 – 2019)
- “*World Conference on Physics Education*” (WCPE), (2012 & 2016)
- *NARST Annual international conference* (2015).
- *GIREP – MPTL* (2014)

## **OTHER SCIENTIFIC ACTIVITIES**

- Director of the Science Teaching Laboratory, Department of Primary Education (since March 2015).
- Founder and scientific responsible of the Science and Technology Center “*Science in the City*” (University of Crete and Municipality of Rethymno, since February 2020)
- Supervision of eight Ph.D. thesis (five completed)
- Member of the 3-member Committee of 6 doctoral thesis
- Member of the 7-member Committee of 25 doctoral thesis
- Supervision of 17 master thesis
- Supervision of 49 diploma thesis
- Member of the Studies Committee of the Department of Primary Education, University of Crete (2010-2013 & 2020 - now)
- Member of the Postgraduate Committee of the Department of Primary Education, University of Crete (2012-2014 & 2020- now)
- ERASMUS Coordinator of the Department of Primary Education for students visiting partner Universities in Germany
- President (2015 -2017) and Vice-President (2019 – 2021) of the Hellenic Association for Science Education and ICT in Education (ENEPHET)