University Academic Curriculum Vitae

Personal information

Name: Maria Stergiadi

Education since leaving school

- *2004*; (5-yr) Master's Degree in Environmental Engineering
  (Technical University of Crete, Greece; School of Environmental Engineering)
- *2006*; (2-yr) Specialized Master's Degree in Environmental and Sanitary Engineering
  (Technical University of Crete, Greece; School of Environmental Engineering)
- *2009*; (5-yr) Master's Degree in Civil Engineering
  (University of Patras, Greece; Department of Civil Engineering)
- *2014*; (2-yr) Specialized Master's Degree in Environmental Education
  (University of the Aegean, Greece; Department of Preschool Education Sciences and Educational Design)
- 2021; PhD in Sustainable Energy and Technologies
  Subject area: Hydrological Modelling for the Optimization of Hydropower Production
  (Free University of Bozen-Bolzano; Faculty of Science and Technology)

Present appointment

- Title of appointment: Research assistant
- Start of appointment: 01/06/2025
- Employer: Competence Center for Economic, Ecological and Social Sustainability, Free University of Bozen-Bolzano, Italy
- Brief description of responsibilities:
  - Research assistant & Coordinator of research project FLASH - Flash floods prediction and impacts in protected mountain areas
  - Tasks:
    - Hydrological & hydraulic/fluid-dynamic modelling with solid transport
    - Project coordinator among parties involved: research groups of Prof. M. Righetti and Prof. C. Wellstein (Faculty of Agricultural, Environmental and Food Sciences), Autonomous Province of Bolzano

Professional experience

From / to	Job title	Name of academic Institution	Academic level	Responsibilities
June 2024-May 2025	Research assistant	Free University of Bozen-Bolzano, Faculty of Agricultural, Environmental and Food Sciences, Italy	PhD	Data driven anomaly detection and classification for sustainable water smart grids management (DIADEM project Research assistant & Coordinator)
March 2021-May 2024	Hydraulic engineer	Region of South Aegean. Rhodes, Greece	PhD	Hydraulic / hydrological projects for flood protection and mitigation, defense structures for hydraulic safety and watershed management
November 2020 – February 2021	Collaborator (contract of intellectual work)	University of Trento, Department of Civil, Environmental and Mechanical Engineering, Italy	MSc degree	Project PAT (AI) APRIE 2019: Development of a forecast chain of water availability on the basis of ESP and Reverse ESP techniques for water supply systems, using hydrological models (in collaboration with the Free University of Bozen-Bolzano)
March 2020 – May 2020	Guest PhD researcher	Swiss Federal Institute for Forest, Snow and Landscape Research WSL. Birmensdorf, Switzerland.	MSc degree	- Application of ESP/ revESP for sub-seasonal to seasonal hydrological predictability over Switzerland - Investigation of leading factors controlling seasonal hydrological predictability
July 2012 – April 2015	Researcher	Utrecht University, Faculty of Geosciences, Department of Physical Geography. Utrecht, The Netherlands.	MSc degree	Assessment of the impact of climate change on the stocks and fluxes of nutrients, toxicants and pathogens at the river basin scale. Part of the RIVM (Dutch National Institute for Public Health and the Environment) “Climate Cascades” Project
March 2010 – March 2011	Coordinating Beneficiary	Municipality of Rhodes, Directorate of Technical Works, Engineering Department. Rhodes, Greece.	MSc degree	Coordinating Beneficiary of LIFE (FRAMME–LIFE08 NAT/GR/000533, Fire Restoration Methodology for Mediterranean Forests–Environmental Safety and Sustainability of four Interventions in the Rhodes Natura 2000 Site)

February 2008 – August 2008	Researcher	University of Patras, Department of Civil Engineering, Environmental Engineering Laboratory. Patras, Greece.	BSc degree	Community Initiative Program INTERREG IIIA Greece–Italy 2000–2006. Project "PRIMAC: Protection of coastal aquifers from seawater intrusion. Integrated actions in order to protect coastal areas from anthropogenic pollutions and for groundwater restoration by reversing the seawater intrusion in coastal aquifers"

Experience in academic teaching

- July 2012–April 2015:
  Teaching Assistant; Utrecht University, Faculty of Geosciences, Department of Physical Geography. Utrecht, The Netherlands
  Postgraduate course "Unsaturated Zone Hydrology", Subject area: Hydrology
- September 2005–February 2006:
  Teaching Assistant; Technical University of Crete, School of Environmental Engineering. Chania, Greece
  Undergraduate course "Optimization of Environmental Systems", Subject area: Optimization methods

Other academic responsibilities

- *Coordinator of DIADEM project* (Data driven anomaly detection and classification for sustainable water smart grids management, 01/06/2024 – 30/05/2025)
  - Coordination of collaboration / meetings / research objectives between the research teams of the Faculty of Agricultural, Environmental and Food Sciences (hydraulic behaviour of water distribution systems) and the Faculty of Engineering (Artificial Intelligence implementations) of the Free University of Bozen-Bolzano
- *Coordinator of FLASH project* (Flash floods prediction and impacts in protected mountain areas, 01/06/2025 – 30/05/2026)
  - Coordination of collaboration / meetings / research objectives between the research teams of Prof. M. Righetti (hydrology/hydraulics) and Prof. C. Wellstein (ecology) of the Faculty of Agricultural, Environmental and Food Sciences and the Autonomous Province of Bolzano (Civil Protection Department, Meteorological Office, Hydrology and Dams Office)

Memberships

- Member of the Italian Hydrological Society
- Member of the European Geosciences Union (EGU)
- Member of the Technical Chamber of Greece (National registry of professional engineers)

Publications

2024 *M. Stergiadi*, M. Zappa, K. Bogner, M. Righetti, M. Borga. Leading Factors Controlling the Skill of Seasonal Streamflow Forecasts (in preparation).

2024 *M. Stergiadi*, M. Zappa, K. Bogner, M. Righetti, M. Borga. Sources of Seasonal Hydrological Predictability in Switzerland (in preparation).

2020 *M. Stergiadi*, N. Di Marco, D. Avesani, M. Righetti, M. Borga. Impact of Geology on Seasonal Hydrological Predictability in Alpine Regions by a Sensitivity Analysis Framework. Water 12(8), 2255, 2020. doi:10.3390/w12082255.

2018 M. van der Perk, *M. Stergiadi*, T.C.M. de Nijs, R.N.J. Comans, M.F.P. Bierkens. The Response of Metal Leaching from Soils to Climate Change and Land Management in a Temperate Lowland Catchment. Catena 171, 426–439, 2018. doi:10.1016/j.catena.2018.07.034.

2016 *M. Stergiadi*, M. van der Perk, T.C.M. de Nijs, M.F.P. Bierkens. Effects of Climate Change and Land Management on Soil Organic Carbon Dynamics and Carbon Leaching in Northwestern Europe. Biogeosciences 13, 1519–1536, 2016. doi:10.5194/bg-13-1519-2016.

2008 I.K. Nikolos, *M. Stergiadi*, M.P. Papadopoulou, G.P. Karatzas. Artificial Neural Networks as an Alternative Approach to Groundwater Numerical Modelling and Environmental Design. Hydrological Processes 22(17), 3337–3348, 2008. doi:10.1002/hyp.6916.

Conference papers & proceedings

2019 *M. Stergiadi*, M. Righetti, D. Avesani, M. Zaramella, M. Borga. The Role of Catchment Properties on the Importance of Initial Hydrologic Conditions for Seasonal Hydrological Forecasting in Alpine Areas. Peer-reviewed conference paper. Proceedings of the 16th International Conference on Environmental Science and Technology. Rhodes, Greece, 4–7 September 2019 (https://cest2019.gnest.org/sites/default/files/presentation_file_list/cest2019_00105_posterf_paper.pdf)

2008 I.K. Nikolos, *M. Stergiadi*, M.P. Papadopoulou, G.P. Karatzas (2008). Groundwater Numerical Modeling and Environmental Design Using Artificial Neural Networks and Differential Evolution. In: Lovrek I., Howlett R.J., Jain L.C. (eds), Knowledge-Based Intelligent Information and Engineering Systems. KES 2008. Lecture Notes in Computer Science, vol. 5178. Springer, Berlin, Heidelberg. doi:10.1007/978-3-540-85565-1_5.

2006 M.P. Papadopoulou, E. Vondikaki, *M. Stergiadi*, G.P. Karatzas. Optimal Freshwater Management with Emphasis in Environmental Quality Criteria in Coastal Regions. Fully rated conference record. VIII Protection and Restoration of the Environment International Conference. Chania, Greece, 2–6 July 2006.

Presentations

2020 *M. Stergiadi*, M. Zappa, K. Bogner, M. Righetti, M. Borga. Dominant factors controlling sub-seasonal to seasonal hydrological predictability in Switzerland. Oral presentation (online), 18th Swiss Geosciences Meeting, 6–7 November 2020.

2020 *M. Stergiadi,* N. Di Marco, M. Righetti. Streamflow forecasting for the optimization of hydropower production. Oral presentation, Workshop: Tecniche di misura e di ricerca sperimentale avanzate applicate alla fluidodinamica. Bozen-Bolzano, Italy, 16 October 2020.

2020 *M. Stergiadi*, N. Di Marco, D. Avesani, M. Borga, M. Righetti. Sensitivity of seasonal hydrological forecast skill to catchment properties. Oral presentation (online), European Geosciences Union (EGU) General Assembly, 4–8 May 2020.

2019 *M. Stergiadi*, M. Righetti, D. Avesani, M. Zaramella, M. Borga. Dominant factors controlling seasonal hydrological predictability in Alpine areas: the impact of catchment properties. Oral/poster presentation, Decennale e Giornate dell'Idrologia (Decennial and Hydrology Days). Bologna, Italy, 16–18 September 2019.

2019 *M. Stergiadi*, M. Righetti, D. Avesani, M. Zaramella, M. Borga. The Role of Catchment Properties on the Importance of Initial Hydrologic Conditions for Seasonal Hydrological Forecasting in Alpine Areas. Oral/poster presentation, 16th International Conference on Environmental Science and Technology (CEST2019). Rhodes, Greece, 4–7 September 2019.

2019 *M. Stergiadi*, M. Righetti, K. Kaffas, D. Avesani, M. Zaramella, M. Borga. Impact of Errors in the Initial Hydrologic Conditions on Seasonal Hydrological Predictions: The Role of Catchment Properties. Poster presentation, European Geosciences Union (EGU) General Assembly. Vienna, Austria, 7–12 April 2019.

2018 *M. Stergiadi*, M. Righetti. Hydrological modelling for the optimization of hydropower production. Oral presentation, International Conference: Two Days on Energy Economics. Bozen-Bolzano, Italy, 5–6 July 2018.

2014 *M. Stergiadi*, T. de Nijs, M. van der Perk, L.T.C. Bonten. Assessment of the Impact of Climate Change and Land Management Change on Soil Organic Carbon Content, Leached Carbon Rates and Dissolved Organic Carbon Concentrations. Poster presentation, European Geosciences Union (EGU) General Assembly. Vienna, Austria, 27 April–2 May 2014.

2013 T. de Nijs, A.M. de Roda Husman, J. Schijven, A. Sterk, M. van der Perk, *M. Stergiadi*, M. Bierkens, O.Oenema, T. Fierens, A. Standaert. Climate Cascades. Poster presentation, International Society for Environmental Epidemiology Conference. Basel, Switzerland, 19–23 August 2013.

2013 *M. Stergiadi*, T. de Nijs, A. Sterk, M. van der Perk, M.F.P. Bierkens. Assessment of the Impact of Climate Change on the Stocks and Fluxes of Nutrients, Toxicants and Pathogens at the River Basin Scale. Poster presentation, International Interdisciplinary Conference on Land Use and Water Quality. The Hague, The Netherlands, 10–13 June 2013.

2013 *M. Stergiadi*, T. de Nijs, A. Sterk, M. van der Perk, M.F.P. Bierkens. Assessment of the Impact of Climate Change on the Stocks and Fluxes of Nutrients, Toxicants and Pathogens at the River Basin Scale. Poster presentation, EGU General Assembly. Vienna, Austria, 7–12 April 2013.

Digital competence

- Hydrological/Hydraulic Models: BASEMENT, HEC-RAS, PTC (Princeton Transport Code), Hydrus, ICHYMOD (Integrated Catchment-scale Hydrological Model), EPANET/WNTR
- Software: MATLAB, Fortran, R, Python
- GIS & Visualization Toos. QGIS

Language competence

Mother tongues: Italian, Greek

Other languages:

- English (*Level C1; UniBz internal language exam*)
- Italian (Level C1; *UniBz internal language exam*)
- German (Level B2; *UniBz internal language exam*)

I hereby declare that the information contained is made pursuant to and for the purposes of articles 46 and 47 of Presidential Decree 445/2000.

Date: **17 / 10 / 2025**