

## Curriculum Vitae

**First name:** Sotirios

**Surname:** Vasileiadis

**Date and Place of Birth:** 18/04/1977, Veroia, Greece

**Marital status:** Single

**Telephone #:** +302331071102;  
+30 6976 833 777 (preferred);

**Email accounts:** [vasiliad@gmail.com](mailto:vasiliad@gmail.com) (preferred);  
[sovasileiadis@uth.gr](mailto:sovasileiadis@uth.gr)



## Studies - Degrees:

- PhD in the Department of Agricultural and Environmental Chemistry of Università Cattolica del Sacro Cuore (Piacenza, Italy), specializing in targeted metagenomics and bioinformatics; degree conferred in 2012. Thesis title: “*Reflections of ecosystem services on the agricultural soil prokaryotic phylogenetic and functional diversity: PCR based approaches in prokaryotic ecology*”.
- MSc in Organic Farming, specialization in plant pathology and molecular plant-microbe interactions and biocontrol at Wageningen University (The Netherlands); degree conferred in 2008;
- Diploma in Agricultural Sciences with specialization in plant production at the Aristotle University of Thessaloniki (Greece; 5-year degree / MSc-equivalent); degree conferred in 2003;

## Relevant employment history:

- Since May 20<sup>th</sup> 2021: tenure-track Assistant Professor at the Group of Plant and Environmental Biotechnology of the Department of Biochemistry and Biotechnology of the University of Thessaly (at Viopolis, in Larissa, Greece) at the field of Microbial Molecular-Ecology / Genomics.
- From October the 1<sup>st</sup> 2019 until the 5<sup>th</sup> February 2021: lecturer fellow at UTh (Greece) for the courses of General Biology (BA0101), Antidoping in sports (BK2201), and Specific Topics in Microbial Ecology (BX0902).
- From July the 1<sup>st</sup> 2019 until July the 30<sup>th</sup> 2020: research fellow at AUTh (Greece) at the project entitled “Novel technologies at anaerobic digestion aiming at methane production increase” (# 95663, action Research>Create>Innovate, EU Partnership Agreement 2014-2020. Topic: Characterization of the microbial population using massively parallel sequencing of the 16S rRNA gene aiming at the monitoring of population shifts in continuous stirred-tank reactors (CSTR).
- Marie Skłodowska Curie Actions Individual Fellowship fellow from July 1<sup>st</sup> of 2017 until June the 30<sup>th</sup> 2019. Project title “EMIGRATE: Exploring MIcrobial networking in pesticides biodegradation; novel inocula and biocatalysts for biodepuration of agro-industrial Effluents”. Meta-genomics/transcriptomics/bolomics/proteomics methods and high throughput techniques heavily relying in large-dataset bio/chemo-informatics were implemented by the fellow for achieving the project aims. The project website can be found at: <http://emigrate.bio.uth.gr>
- Research Associate, FII (former CERAR) UniSA, from March 2014 to March 2017. Research Topic: *Microbial ecology of metal stressed environments (soil, water, wastewater, biosolids) and horizontal gene transfer events in wastewater* (supervised by E Donner and E Lombi). Tasks: experimental plan and protocol setup for screening microbial diversity and functions using high throughput sequencing (HTS) of phylogenetic marker genes combined with shotgun meta- genomics/transcriptomics and associated bio-informatics/statistics; student supervision and training; Assigned as Coordinator of the FII Microbiology Lab since May 1<sup>st</sup> 2015.
- Postdoctoral Researcher, Università Cattolica del Sacro Cuore, Feb 2012 – Feb 2014. Research topic: *Effects of synthetic and natural pesticides on the soil microbial communities* (SNAC project, supervised by M Trevisan). Tasks: protocol setup/performance for microbial diversity screening with HTS of phylogenetic marker genes and associated bio-informatics/statistics; genomics; student supervision and training.
- Research Assistant, Università Cattolica del Sacro Cuore, Dec 2011. Research topic: SNAC project (see above). Tasks: protocol setup/performance, microbial diversity screening with HTS of

phylogenetic marker genes and associated bio-informatics/statistics.

- Research Assistant, NIOO-KNAW (Netherlands Institute of Ecology; currently in Wageningen, the Netherlands, supervised by JH Leveau and J Raaijmakers), Aug – Nov 2007. Research topic: *High throughput screening of large insert metagenomic libraries using fluorescent in situ hybridization (FISH) and flow cytometry*. Tasks: handling of the metagenomic library (fosmids/*E. coli* hosts); FISH protocol development; epi-fluorescent microscopy; flow cytometry.

#### **Industrial innovation:**

- Contract and industry-academia collaboration with Advanced Analytical Technologies (AAT, Piacenza, Italy; [www.aat-taa.eu](http://www.aat-taa.eu)); bioinformatics/statistics tasks; projects managed by Dr S Soldi.
- An industry-academia collaboration (UniSA-ECAS4) for the setup and application of molecular biology protocols in testing the antimicrobial efficacy of anolytes.

#### **Grants/Awards:**

##### *Project Grants Received/Partnered*

- Oct 2024 – Oct 2028: **Management committee member** at COST Action CA23104 “Water4Reuse: Mainstreaming water reuse into circular economy paradigm”. Coordinated by INRAE (Γαλλία).
- Feb 2024 – Jan 2028: **Team member (PhD student co-supervisor)** of DN (HORIZON-MSCA-2022-DN-01-01). Pharm-ERA: Improving monitoring and environmental risk assessment of pharmaceuticals, antimicrobial resistance and pathogens from terrestrial to aquatic environments. Project grant agreement pending with 2,657,779€ requested budget (UTh participation with 240,000€)
- Nov 2022 – Oct 2025: **Team member** of WIDENING (HORIZON-WIDERA-2021-ACCESS-03-01 project) ACTIONr: Research ACTION network for reducing reactive nitrogen losses from agricultural ecosystems. Project grant agreement# 101079299. 1,480,300€ (UTh participation with 661,000€)
- Nov 2022 – Oct 2026: **Team member** of REA (HORIZON-CL6-2022-FARM2FORK-01-01 project) RATION: Risk Assessment InnOvation for low-risk pesticides. Project grant agreement# 101084163. 6,994,748€ (UTh participation with 697,375€)
- Jan 2021 – Jun 2023: **Coordinator** of the project INVERT: INteractions of Veterinary antibiotics with soil microorganisms: exploiting microbial degradation to avert Environmental contamination and ResisTance dispersal. HFRI 01183, UTh Research Committee project number 6634. The main objective of the project is shed light in the complex interactions of VA with soil microorganisms, INVERT (project acronym) the outcome of the environmental pressure imposed by VA on the soil microbial community from negative (selection for resistance) to beneficial (selection for energy-gain biodegradation of VA) and exploit growth-linked biodegradation to reduce environmental exposure to VA. 170,000€.
- 2021-2022: **Partner** in “Effets de la turbulence sur la prolifération et la toxicité des diatomées” (TURBU-DIATOX), funded by CNRS - L’Institut national des sciences de l’Univers (INSU). Prof. U. Christaki and K. Kormas (UTh). The aim of the project is to study the transcriptional profile of diatoms under aquatic turbulence. 20,000€.
- **External collaborator** (contracted from 25 August to 5 October 2019 through the UniSA, and consultant until today) at the Australian Medical Research Future Fund (MRFF) Frontiers project entitled OUTBREAK. The project scope is to tackle antibiotic resistance at an One Health approach (<https://outbreakproject.com.au>; <https://www.linkedin.com/company/outbreak-project/>). OUTBREAK is led by the University of Technology of Sydney and is a competence buildup initiative funded with 1 million Australian dollars divided among 14 organizations for the development of an antimicrobial resistance “knowledge engine” capable of predicting outbreaks and informing interventions. As part of the purpose of OUTBREAK, the project developed tools will be implemented in a followup 5-year monitoring and implementation project if funded. My tasks are mainly related to setting up the bioinformatics analysis of animal, natural and built environmental metagenomes for the identification and relative quantification of antibiotic resistance genes and phylogenetic markers among other data analysis tasks.
- Project **coordinator** of Marie Skłodowska Curie H2020 Individual Fellowship [IF] for the period July 2017 – June 2019. Title: “EMIGRATE: Exploring MIcrobial networking in pesticides biodegradation; novel inocula and biocatalysts for biodepuration of agro-industrial Effluents”.

Project number 749463 with maximum estimated funding of €152,653.20.

- **Research Associate (RA)** in the South Australian PRIF International Research Grant Program IRPG 45 with partners from Nereus COST-action, the IWRC (University of Cyprus, Cyprus) and the Volcani Center (Agricultural Research Organisation, Israel), 2015-2020, (Donner, Lombi, Vasileidis, Thierry, Fatta-Kassinos, Cytryn). Total funding \$992,000 (SA PRIF: A\$400,000; UniSA: A\$180,000; Nereus A\$292,000; Volcani \$120,000). “Transfer and control of antibiotic resistance bacteria and their genes during wastewater treatment and reuse”.
- **RA** in South Australian PRIF Industry Linkage Research Grant with ECAS4 Industry Partner, 2014-2015, (Elmas, Donner, Nann, Lombi, Vasileidis). Total funding A\$232,800 (ECAS4: A\$140,000; SA PRIF: A\$92,800). “Sanitisation and disinfection using electrochemically generated disinfectants”.
- Australian Synchrotron Access Grant **beneficiary**; 48 h beamtime on the X-ray Absorption Spectroscopy beamline, April 2015. “Role of soil properties in controlling silver selective pressure and its effects on soil bacterial communities.” (AS151/XAS/9123; Donner, Lombi, Vasileidis, Brunetti). As the commercial rate for synchrotron beamtime is currently \$15K/day, this is the equivalent of \$30K in facility access funding.

#### *Networking grant*

ECRNA – ERC Networking Award. Visiting researcher in the Dept of Biotech. and Biochem. of the UTh (Thessaly, Greece) June/July 2015 (Australian- A - \$5,550).

#### *Awards-Scholarships*

Italian Society of Agricultural Chemistry PhD thesis distinction award (500 €) /// PhD scholarship (~45,000 € total / 3 years) /// MSc scholarship (~21,000 € total / 2 years)

#### **Student supervision and support, teaching activities, and administrative support:**

- Supervisor of the PhD candidate Marios Valmas who received an HFRI scholarship on the topic of “Pathogenicity and environment: pathogen and AMR dispersal” in the sector of Agricultural Sciences and Food.
- Coordinated the work of 2 postdoctoral researchers and 1 PhD student during the performance of INVERT project.
- Supervised 16 undergraduate students and 6 MSc students in over the past years as a faculty member in UTh.
- Co-supervised one PhD student and actively involved in the steering committee of 5 more PhD students, co-supervised several MSc and visiting students. Also refereed 5 PhD thesis defenses.
- Teaching support activities, training of students and visiting researchers in molecular biology laboratory methods; teaching bioinformatics and associated statistical methods; assisting with the reporting of related research results; conducting student evaluation.
- Invited speaker at the Mikrobiokosmos 2018 Summer-School (session entitled “Prokaryotic genome assembly and annotation”, 24-28 June, Moni Paou, Argalasti, Volos) and the NEREUS COST-action ES1403 Training School (session “Next generation sequencing approaches for ARB & ARGs screening in wastewater, soil and plant environments”, 29-31 May, Nicosia, Cyprus).
- Member of the coordination committee of the MSc programs “Advanced Experimental and Computational Biosciences”, “HosMic”, and “Biotechnology – Nutritional and Environmental Quality”. Active support with their quality assessment and evaluation by the national accreditation organization with successful outcomes.
- Until today, coordinator and tutor at the DBB UTh of courses of “Biostatistics” (BII0101; 2<sup>nd</sup> semester undergrad since academic year 2022-2023), and “Specific Modules of Microbial Ecology” (BX0902; 6<sup>th</sup> semester undergrad since academic year 2020-2021). Teaching lectures also in the undergraduate DBB UTh course of “Introduction to Biology” (theory and laboratory, BA0101; 1<sup>st</sup> semester undergrad, since the academic year 2022-2023), and the DUTH course of “Molecular Ecology” (since the academic year of 2023-2024). Teaching at the DBB UTh MSc programmes: Advanced Experimental and Computational Biosciences (module coordinator: “Topics in Computational Genomics and Systems Biology”), Bioentrepreneurship, Biotechnology Nutrition and the Environment, Host-Microbe interactions HosMic (interdepartmental, English-taught; module coordinator “Bioinformatics for Microbiomes”). In the past I taught autonomously the courses of “Introduction to Biology” (theory and laboratory, BA0101; 1<sup>st</sup> semester undergrad, of the academic year 2019-2021), “Antidoping in sports” (BK2201; 8<sup>th</sup> semester, of the academic year

2019-2020).

#### Academic reviewing/editing activity:

- **Reviewer in scientific peer-reviewed journals:** Applied Environmental Soil Science, BIOMED Research International, Critical Reviews in Biotechnology, **Ecology Letters**, **Environmental Microbiology**, Environmental Science and Pollution Research, FEMS Microbiology Ecology, Frontiers in Microbiology, Frontiers in Plant Science, International Journal of Microbiology, Journal of Applied Microbiology, **Journal of Environmental Chemical Engineering**, **Journal of Hazardous Materials**, Letters in Applied Microbiology, Pedobiologia, PeerJ, Research in Microbiology, Science of the Total Environment, Scientific Reports (NPG), Journal of Environmental Management, **Soil Biology and Biochemistry**, The Scientific World Journal, Waste Management & Research, **Water Research**, **ISME communications**.
- **Editor in scientific peer-reviewed journals:** Associate Editor in **Frontiers In Microbiology**, topic of **Systems Microbiology** since March 2022.
- **Grants: Australian Research Council (ARC)** National Competitive Grants Program (NCGP) assessor since Oct. 2018. **Natural Environment Research Council (UK)** reviewer since Nov. 2018, **Australian Government, Department of Agriculture, Fisheries and Forestry (DAFF)**, Future Drought Fund – Extension and Adoption of Drought Resilience Farming Practices Grants Program, Australia (remuneration provided for this service) since 2022. Registered reviewer at the **Hellenic Foundation for Research and Innovation (HFRI)**. Reviewer for the **French National Research Agency (Agence Nationale de la Recherche – ANR)**.

#### Publication list

##### [BC] Scholarly book chapters

1. Voolaid V, Donner E, **Vasileiadis S**, Berendonk T (2017). Bacterial diversity and antibiotic resistance genes in wastewater treatment plant influents and effluents. In Antimicrobial resistance in the wastewater treatment process. Keen, P. L. and Fugère, R. eds. (Hoboken, New Jersey, USA: Wiley Blackwell), pp 157-178.
2. **Vasileiadis S**, Puglisi E, Cocconcelli PS, Trevisan M (2013). Screening phylogenetic and functional marker genes in soil microbial ecology. In Omics in soil science. Nannipieri, P, Pietramellara G and Renella G. eds. (Norfolk, UK: Caister Academic Press), pp 45-61.

##### [PP] Preprints

1. Dhakar K, Kellari LM, Karas, PA, Theodorakopoulos A, Styllas M, Papadopoulou ES, Karpouzas DG, Papadopoulou KK, **Vasileiadis S** (2024). Root microbiome along an altitude gradient of the lithophytic *Ramonda heldreichii*, an endemo-relict species of Mount Olympus. SSRN <http://dx.doi.org/10.2139/ssrn.4924858><http://dx.doi.org/10.2139/ssrn.4924858>
2. Bekris F, Lola D, Papadopoulou E, **Vasileiadis S**, Paramithiotis S, Kotseridis Y, Karpouzas D (2024). Spontaneous vinification supports different microbiota, volatilome and leads to wines with different sensory attributes compared to vinifications inoculated with commercial and indigenous to vidiano cultivar *Saccharomyces cerevisiae*. SSRN, <http://dx.doi.org/10.2139/ssrn.4727043>
3. Lagos S, Tsetsekos G, Mastrogianopoulos S, Tyligada M, Diamanti L, **Vasileiadis S**, Sotiraki S, Karpouzas D (2023). Interactions of anthelmintic veterinary drugs with the soil microbiota: toxicity or enhanced biodegradation? SSRN <http://dx.doi.org/10.2139/ssrn.4441564>
4. Sim J, Drigo B, Doolette C, **Vasileiadis S**, Karpouzas D, Lombi E (2022). Impact of twenty pesticides on soil carbon microbial functions and community composition. SSRN, <http://dx.doi.org/10.2139/ssrn.4124958>
5. Dalakouras A, Katsaouni A, Avramidou M, Dadami E, Tsiouri O, **Vasileiadis S**, Makris A, Georgopoulou ME, Papadopoulou KK (2022). Systemic silencing and DNA methylation of a host reporter gene induced by a beneficial fungal root endophyte. bioRxiv, 2022.2006.2019.496700
6. **Vasileiadis S**, Perruchon C, Scheer B, Adrian L, Steinbach N, Trevisan M, Plaza-Bolanos P, Aguera A, Chatzinotas A, Karpouzas DG (2020). Nutritional inter-dependencies and a carbazole-dioxygenase are key elements of a bacterial consortium relying on a *Sphingomonas* for the degradation of the fungicide thiabendazol. bioRxiv, 2020.2003.2030.015693.

- Papadopoulou ES, Bachtsevani E, Lampronikou E, Adamou E, Katsaouni A, Thion C, **Vasileiadis S**, Menkissoglu- Spiroudi U, Nicol GW, Karpouzas DG (2020). Comparison of the in vitro activity of novel and established nitrification inhibitors applied in agriculture: challenging the effectiveness of the currently available compounds. *bioRxiv*, 2020.2004.2007.023168

***[J] Peer reviewed journals***

*(Scopus: total citations 1536; H-index 24)*

*(Google Scholar: total citations 2076; H-index 28; i10-index 48)*

- Dhakar, K, Kellari, L M, Karas, PA, Theodorakopoulos A, Styllas MN, Papadopoulou ES, Karpouzas DG, Papadopoulou KK, **Vasileiadis S (corresponding author)** (2024). Microbiome analysis of the lithophytic resurrection plant *Ramonda heldreichii*, reveals root driven tight-rhizosphere vs elevation specific loose-rhizosphere communities. *Rhizosphere* 32, 100969, <https://doi.org/10.1016/j.rhisph.2024.100969>
- Boukhatem A, Rached O, Bentellis A, **Vasileiadis S**, Castaldi P, Garau G, Diquattro S (2024). Promoting the recovery of soil health in As and Sb-polluted soils: new evidence from the biochar-compost option. *Environ Sci Pollut Res*
- Bekris F, Lola D, Papadopoulou E, **Vasileiadis S**, Paramithiotis S, Kotseridis Y, Karpouzas D G (2024). Spontaneous vinification supports different microbiota, volatilome and leads to wines with different sensory attributes compared to vinifications inoculated with commercial and indigenous to vidiano cultivar *Saccharomyces cerevisiae*. *LWT* 205, 116543, <https://doi.org/10.1016/j.lwt.2024.116543>
- Kebede V, Ravizza T, Balosso S, Di Sapia R, Canali L, Soldi S, Galletti S, Papazlatani C, Karas PA, **Vasileiadis S**, Sforzini A, Pasetto L, Bonetto V, Vezzani A, Vesci L (2024). Early treatment with rifaximin during epileptogenesis reverses gut alterations and reduces seizure duration in a mouse model of acquired epilepsy. *Brain, Behav, Immun* 119, 363-380
- Papadopoulou ES, Bachtsevani E, Katsoula A, Charami C, Lampronikou E, **Vasileiadis S**, Karpouzas DG (2024). Nitrification inhibitors impose distinct effects on comammox bacteria and canonical ammonia oxidizers under high N fertilization regimes. *Appl Soil Ecol* 199, 105417
- Garau M, Lo Cascio M, **Vasileiadis S**, Sizmur T, Nieddu M, Pinna MV, Sirca C, Spano D, Roggero PP, Garau G, Castaldi P (2024). Using biochar for environmental recovery and boosting the yield of valuable non-food crops: The case of hemp in a soil contaminated by potentially toxic elements (PTEs). *Heliyon* 10, e28050
- Katsivelou E, Perruchon C, Lithourgidis AA, Kotsopoulos TA, Karpouzas DG, **Vasileiadis S (corresponding author)** (2024). Bioaugmentation of manures by a tiamulin-degrading *Sphingomonas* as a means to alleviate environmental dispersal of antibiotic residues. *Bioremediation J*, 1-14
- Maire Y, Schmitt FG, Kormas K, **Vasileiadis S**, Caruana A, Skouroliakou D-I, Bampouris V, Courcot L, Hervé F, Crouvoisier M, Christaki U (under review). Effects of turbulence on diatoms of the genus *Pseudo-nitzschia* spp. and associated bacteria. *FEMS Microbiol Ecol*
- Papadopoulou E, Bekris F, **Vasileiadis S**, Krokida A, Rouvali T, Veskoukis AS, Liadakia K, Kouretas D, Karpouzas DG (2023). Vineyard-mediated factors are still operative in spontaneous and commercial fermentations shaping the vinification microbial community and affecting the antioxidant and anticancer properties of wines. *Food Res Int*, 113359
- Garau M, Castaldi P, Pinna MV, Diquattro S, Cesarani A, Mangia NP, **Vasileiadis S**, Garau G (2023). Sustainable Restoration of Soil Functionality in PTE-Affected Environments: Biochar Impact on Soil Chemistry, Microbiology, Biochemistry, and Plant Growth. *Soil Systems* 7, 96
- Katsivelou E, Perruchon C, Karas PA, Sarantidou A, Pappa E, Katsoula A, Ligda P, Sotiraki S, Martin-Laurent F, **Vasileiadis S (corresponding author)**, Karpouzas DG (2023). Accelerated dissipation, soil microbial toxicity and dispersal of antimicrobial resistance in soils repeatedly exposed to tiamulin, tilmicosin and sulfamethoxazole. *Sci Total Environ* 893, 164817
- Lagos S, Tsetsekos G, Mastrogianopoulos S, Tyligada M, Diamanti L, **Vasileiadis S**, Sotiraki S, Karpouzas DG (2023). Interactions of anthelmintic veterinary drugs with the soil microbiota: Toxicity or enhanced biodegradation? *Environ Pollut*, 122135

13. Kalamaras SD, Christou ML, Tzenos CA, **Vasileiadis S**, Karpouzas DG, Kotsopoulos TA (2023). Investigation of the Critical Biomass of Acclimated Microbial Communities to High Ammonia Concentrations for a Successful Bioaugmentation of Biogas Anaerobic Reactors with Ammonia Inhibition. *Microorganisms* 11, 1710
14. Dalakouras A, Katsaouni A, Avramidou M, Dadami E, Tsiouri O, **Vasileiadis S**, Makris A, Georgopoulou ME, Papadopoulou KK (2023). A beneficial fungal root endophyte triggers systemic RNA silencing and DNA methylation of a host reporter gene. *RNA Biology* 20, 20-30
15. Sim JXF, Drigo B, Doolette CL, **Vasileiadis S**, Donner E, Karpouzas DG, Lombi E (2023). Repeated applications of fipronil, propyzamide and flutriafol affect soil microbial functions and community composition: A laboratory-to-field assessment. *Chemosphere*, 138850
16. Kakagianni M, Tsiknia M, Feka M, **Vasileiadis S**, Leontidou K, Kavroulakis N, Karamanoli K, Karpouzas DG, Ehaliotis C, Papadopoulou KK (2023). Above- and below-ground microbiome in the annual developmental cycle of two olive tree varieties. *FEMS Microbes*, 4, xtad001
17. Sim JXF, Drigo B, Doolette CL, **Vasileiadis S**, Karpouzas DG, Lombi E (2022). Impact of twenty pesticides on soil carbon microbial functions and community composition. *Chemosphere* 307, 135820
18. Perruchon C, Katsivelou E, Karas PA, Vassilakis S, Lithourgidis AA, Kotsopoulos TA, Sotiraki S, **Vasileiadis S**, Karpouzas DG (2022). Following the route of veterinary antibiotics tiamulin and tilmicosin from livestock farms to agricultural soils. *J Hazard Mater* 429, 128293
19. Fang Y, Van Zwieten L, Rose MT, **Vasileiadis S**, Donner E, Vancov T, Rigg JL, Weng Z, Lombi E, Drigo B, Conyers M, Tavakkoli E (2022). Unraveling microbiomes and functions associated with strategic tillage, stubble, and fertilizer management. *Agric, Ecosyst Environ* 323, 107686
20. Papadopoulou E, Bekris F, **Vasileiadis S**, Papadopoulou KK, Karpouzas DG (2022). Different factors are operative in shaping the epiphytic grapevine microbiome across different geographical scales: Biogeography, cultivar or vintage? *Journal of Sustainable Agriculture and Environment* n/a
21. Papadopoulou ES, Bachtsevani E, Papazlatani CV, Rousidou C, Brouziotis A, Lampronikou E, Tsiknia M, **Vasileiadis S**, Ipsilantis I, Menkissoglu-Spiroudi U, Ehaliotis C, Philippot L, Nicol GW, Karpouzas DG (2022). The Effects of Quinone Imine, a New Potent Nitrification Inhibitor, Dicyandiamide, and Nitrapyrin on Target and Off-Target Soil Microbiota. *Microbiology Spectrum* 0, e02403-02421
22. **Vasileiadis S (also shared correspondence with last author)**, Perruchon C, Scheer B, Adrian L, Steinbach N, Trevisan M, Plaza-Bolaños P, Agüera A, Chatzinotas A, Karpouzas DG (2022). Nutritional inter-dependencies and a carbazole-dioxygenase are key elements of a bacterial consortium relying on a *Sphingomonas* for the degradation of the fungicide thiabendazole. *Environ Microbiol* doi: 10.1111/1462-2920.16116
23. Bekris F, **Vasileiadis S**, Papadopoulou E, Samaras A, Testempasis S, Gkizi D, Tavlaki G, Tzima A, Paplomatas E, Markakis E, Karaoglanidis G, Papadopoulou KK, Karpouzas DG (2021). Grapevine wood microbiome analysis identifies key fungal pathogens and potential interactions with the bacterial community implicated in grapevine trunk disease appearance. *Environmental Microbiome* 16, 23
24. Sim JXF, Doolette CL, **Vasileiadis S**, Drigo B, Wyrsh ER, Djordjevic SP, Donner E, Karpouzas DG, Lombi E (2021). Pesticide effects on nitrogen cycle related microbial functions and community composition. *Sci Total Environ*, 150734
25. Tsiknia M, Skiada V, Ipsilantis I, **Vasileiadis S**, Kavroulakis N, Genitsaris S, Papadopoulou KK, Hart M, Klironomos J, Karpouzas DG, Ehaliotis C (2021). Strong host-specific selection and over-dominance characterize arbuscular mycorrhizal fungal root colonizers of coastal sand dune plants of the Mediterranean region. *FEMS Microbiol Ecol*
26. Karaolia P, **Vasileiadis S (equal contribution with 1<sup>st</sup> author)**, Michael SG, Karpouzas DG, Fatta-Kassinou D (2021). Shotgun metagenomics assessment of the resistome, mobilome, pathogen dynamics and their ecological control modes in full-scale urban wastewater treatment plants. *J Hazard Mater*, 126387
27. Drigo B, Brunetti G, Aleer SC, Bell JM, Short MD, **Vasileiadis S**, Turnidge J, Monis P, Cunliffe D, Donner E (2021). Inactivation, removal, and regrowth potential of opportunistic pathogens and antimicrobial resistance genes in recycled water systems. *Water Res*, 117324
28. Lagos S, Perruchon C, Tsikriki A, Gourombinos E, **Vasileiadis S**, Sotiraki S, Karpouzas DG (2021).



- Bioaugmentation of animal feces as a mean to mitigate environmental contamination with anthelmintic benzimidazoles. *J Hazard Mater*, 126439
29. Christou ML, **Vasileiadis S**, Karpouzas DG, Angelidaki I, Kotsopoulos TA (2021). Effects of organic loading rate and hydraulic retention time on bioaugmentation performance to tackle ammonia inhibition in anaerobic digestion. *Bioresour Technol*, 125246
  30. Katsoula A, **Vasileiadis S**, Karamanoli K, Vokou D, Karpouzas DG (2021). Factors Structuring the Epiphytic Archaeal and Fungal Communities in a Semi-arid Mediterranean Ecosystem. *Microb Ecol*
  31. Papadopoulou ES, Bachtsevani E, Lampronikou E, Adamou E, Katsaouni A, **Vasileiadis S**, Thion C, Menkissoglu-Spirodi U, Nicol GW, Karpouzas DG (2020). Comparison of Novel and Established Nitrification Inhibitors Relevant to Agriculture on Soil Ammonia- and Nitrite-Oxidizing Isolates. *Front Microbiol* 11
  32. Shar S, Shahsavari E, Reith F, Alghamdi OA, Yamani HA, AlJudaibi A, Donner E, **Vasileiadis S**, Ball AS (2020). Dose-related changes in respiration and enzymatic activities in soils amended with mobile platinum and gold. *Appl Soil Ecol*
  33. Christou ML, Vasileiadis S, Kalamaras SD, Karpouzas DG, Angelidaki I, Kotsopoulos TA (2020). Ammonia-induced inhibition of manure-based continuous biomethanation process under different organic loading rates and associated microbial community dynamics. *Bioresour Technol*, 124323
  34. Papadopoulos C, Karas PA, **Vasileiadis S**, Ligda P, Saratsis A, Sotiraki S, Karpouzas DG (2020). Host species determines the composition of the prokaryotic microbiota in *Phlebotomus* sandflies. *Pathogens* 9, 428
  35. Storek V, Gallego S (equal contribution with 1<sup>st</sup> author), **Vasileiadis S (equal contribution with 1<sup>st</sup> author)**, Hussain S, Béguet J, Rouard N, Baguelin C, Perruchon C, Devers-Lamrani M, Karpouzas DG, Martin-Laurent F (2020). Insights into the function and horizontal transfer of isotreturon-degrading pdmAB genes in a biobed system. *Appl Environ Microbiol*, AEM.00474-00420
  36. Ogbughalu OT, **Vasileiadis S**, Schumann RC, Gerson AR, Li J, Smart RSC, Short MD (2020). Role of microbial diversity for sustainable pyrite oxidation control in acid and metalliferous drainage prevention. *J Hazard Mater* 393, 122338
  37. Diqattro S, Garau G, Mangia NP, Drigo B, Lombi E, **Vasileiadis S**, Castaldi P (2020). Mobility and potential bioavailability of antimony in contaminated soils: Short-term impact on microbial community and soil biochemical functioning. *Ecotoxicol Environ Saf* 196, 110576
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  41. Katsoula A, **Vasileiadis S**, Sapountzi M, Karpouzas DG (2020). The response of soil and phyllosphere microbial communities to repeated application of the fungicide iprodione: Accelerated biodegradation or toxicity? *FEMS Microbiol Ecol*, 96: fiae056
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54. Perruchon C., Chatzinotas A., Omirou M., **Vasileiadis S.**, Menkissoglu-Spiroudi U., Karpouzas D.G., (2017) Isolation of a bacterial consortium able to degrade the fungicide thiabendazole and determination of its metabolic pathway: the key role of a *Sphingomonas* phylotype. *Appl Microbiol Biotechnol*
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64. **Vasileiadis S**, Puglisi E, Arena M, Cappa F, van Veen JA, Cocconcelli PS, Trevisan M (2013). Soil microbial diversity patterns of a lowland spring environment. *FEMS Microbiol Ecol*, 86, 172-184
65. **Vasileiadis S**, Coppolecchia D, Puglisi E, Balloi A, Mapelli F, Hamon RE, Daffonchio D, Trevisan M (2012). Response of ammonia oxidizing bacteria and archaea to acute zinc stress and different moisture regimes in soil. *Microb Ecol*, 64: 1028-1037
66. Puglisi E, **Vasileiadis S**, Demiris K, Bassi D, Karpouzas D, Capri E, Cocconcelli P, Trevisan M (2012). Impact of fungicides on the diversity and function of non-target ammonia-oxidizing microorganisms residing in a litter soil cover. *Microb Ecol* 64, 692-701
67. **Vasileiadis S**, Puglisi E, Arena M, Cappa F, Cocconcelli PS, Trevisan M (2012). Soil bacterial diversity screening using single 16S rRNA gene V regions coupled with multi-million read generating sequencing technologies. *PLoS One* 7, e42671
68. Puglisi E, Hamon R, **Vasileiadis S**, Coppolecchia D, Trevisan M (2011). Adaptation of soil microorganisms to trace element contamination: a review of mechanisms, methodologies, and consequences for risk assessment and remediation. *Crit Rev Environ Sci Technol*, 42, 2435-2470
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#### *[CO] Conference oral presentations (presenter)*

1. Katsivelou E, Perruchon C, Karas AP, Sarantidou A, Sotiraki S, **Vasileiadis S**, Karpouzas GD (2022). Environmental fate of three antibiotics, sulfomethoxazole, tiamulin and tilmicosin, and their impact on the microbial community composition, resistome and mobilome of two different soils. *Ecotoxicomic 2022, 3rd International Conference in Microbial Ecotoxicology*, Montpellier, France, 15-18 Nov 2022.
2. **Vasileiadis S**, Perruchon C, Scheer B, Adrian L, Steinbach N, Trevisan M, Plaza-Bolaños P, Agüera A, Chatzinotas A, Karpouzas GD (2020). Nutritional inter-dependencies and a carbazole-dioxygenase are key elements of a *Sphingomonas* dependent consortium for thiabendazole degradation, Montpellier, France (webinar due to coronavirus pandemic), 6-9 Oct.
3. **Vasileiadis S**, C. Perruchon, M. Omirou, B. Scheer, L. Adrian, N. Steinbach, A. Agüera, A. Chatzinotas, and D.G. Karpouzas, Roles and interactions of the members of a bacterial consortium along the degradation of the recalcitrant fungicide thiabendazole revealed via multi-omic approach, in *Mikrobiokosmos 8th Conference "Microbial Communities as growth engines for Greece"*. 2019: Patras, Greece.
4. **Vasileiadis S**, Perruchon, C, Omirou, M, Scheer, B, Adrian, L, Steinbach, N, Chatzinotas, A, Karpouzas, D G (2018). Elucidating the roles and interactions of the members of a bacterial consortium along the degradation of the recalcitrant fungicide thiabendazole via a multi-omic approach. *Hellenic Bioinformatics* 11, Thessaloniki, Greece, 15 - 18 November.
5. **Vasileiadis S**, Brunetti, G, Marzouk, E, Wakelin, S, Kowalchuk, G, Lombi, E, Donner, E (2017). Community-wide functional and structural microbial responses to silver in nine soils. *MICROBIOKOSMOS: 10 years of Microbial Communities in Action*, Athens, Greece, 7-9 April.
6. **Vasileiadis S**, Puglisi E, Trevisan M, Langdon K, McLaughlin M, Lombi E, Donner E (2014). Silver selective pressure on soil microbial communities revealed by high throughput sequencing diversity screening. *SETAC Europe*, Basel, Switzerland, May 11-15.

7. **Vasileiadis S**, Puglisi E, Trevisan M, Lombi E, Donner E (2013). Shifts in microbial diversity in Australian soils exposed to silver. XXXI Convegno Nazionale SICA, Napoli, September 16-17.
8. **Vasileiadis S**, Puglisi E, Arena M, Cappa F, Cocconcilli PS, Trevisan M (2012). Bacterial diversity assessment of highly complex soil environments using multi-million read generating sequencing technologies. 4th International Congress EUROSIL 2012, Soil Science for the Benefit for the Mankind and Environment, Bari, Italy, 02-06 July.
9. **Vasileiadis S**, Balloi A, Mapelli F, Coppolecchia D, Puglisi E, Daffonchio D, Trevisan M, Hamon RE (2009). Biochemical and molecular insights in the adaptation of soil microcosms to high zinc concentrations. 19th International Symposium in Environmental Biogeochemistry, Hamburg, Germany, 14-19 September.

**[COCI Conference oral presentations (co-author)]**

1. Katsivelou E, Perruchon C, Karas A, Sarantidou A, Eleni P, Katsoula A, Sotiraki S, Fabrice M, **Vasileiadis S**, Karpouzas G (2023). The environmental fate and impact on the soil microbial community composition, resistome and mobilome of the veterinary antibiotics sulfamethoxazole, tiamulin and tilmicosin. 10th International Conference of Mikrobiokosmos, Larissa, Greece, 30 Nov - 2 Dec.
2. Michelioudakis V, Zafranias A, Myrasiotis C, Katsoula A, Campos M, **Vasileiadis S**, Karpouzas DG (2023). Comparative genomics and transcriptomic analysis reveals why bacteria of the genus *Paenarthrobacter* are specialists in the degradation of the fungicide iprodione. 10th International Conference of Mikrobiokosmos, Larissa, 30 Nov - 2 Dec.
3. Papadopoulou E, Bekris F, **Vasileiadis S**, Krokida A, Rouvali T, Veskoukis A, Liadaki K, Kouretas D, Dimitrios KG (2023). Vineyard-mediated factors are still operative in spontaneous and commercial fermentations shaping the vinification microbiome and affecting the antioxidant and anticancer properties of wines. 10th International Conference of Mikrobiokosmos, Larissa, Greece, 30 Nov - 2 Dec.
4. Perruchon C, Tagkalidou N, Katsivelou E, Karas A, Kalogiouri N, Menkisoglou O, **Vasileiadis S**, Karpouzas G (2023). Isolation and characterization of a *Sphingomonas* strain able to degrade the pleuromutilin antibiotic tiamulin. 10th International Conference of Mikrobiokosmos, Larissa, Greece, 30 Nov - 2 Dec.
5. Sim JXF, Drigo B, Doolette CL, **Vasileiadis S**, Karpouzas DG, Lombi E (2022). Impact of twenty pesticides on soil carbon microbial functions and community composition. ISME18, 18th International Symposium on Microbial Ecology, Lausanne, Switzerland, 14-19 August 2022.
6. Karas P, Mavriou Z, Alexandropoulou I, Ntougias S, Karpouzas G, Dimitrios, **Vasileiadis S** (2021). Degradation of the highly persistent fungicide thiabendazole by a bacterial consortium in a benchtop bioreactor. 9th conference of Mikrobiokosmos, Athens, 16-18 December.
7. Tsiknia M, Ariannas D, Kakagianni M, Skiada V, **Vasileiadis S**, Karpouzas D, Papadopoulou K, Ehaliotis C (2019). Determinants of intraradical arbuscular mycorrhizal fungi diversity in Greek olive tree cultivars. Mikrobiokosmos 8th Conference "Microbial Communities as growth engines for Greece", Patras, Greece, 18-20 April.
8. Doelsch E, Brunetti G, **Vasileiadis S**, Drigo B, Aler S, Lombi E, Donner E (2019). How do metal pollutant concentration and speciation affect wastewater microbial diversity and antibiotic resistance? International Symposium on the Environmental Dimension of Antibiotic Resistance, Hong Kong, Hong Kong, 2019-06-09 / 2019-06-14.
9. Perruchon C, **Vasileiadis S**, Papadopoulou ES, Chatzinotas A, Omirou M, Gallego-Blanco S, Martin-Laurent F, Karpouzas DG (2017). The degradation of thiabendazole by a proteobacterial consortium: The key role of a *Sphingomonas* member identified via SIP and meta-omic analysis. 7th International Conference on Pesticide Behaviour in Soils, Water and Air, York, UK, 30th Aug - 1st Sep.
10. Brunetti G, **Vasileiadis S**, Drigo B, Wu X, Saint C, Lombi E, Donner E (2018). Effects of single pulse silver, copper, and zinc selective pressure on wastewater microbial diversity and antibiotic resistance. XENOWAC II 2018, Limassol, Cyprus, 10-12 October.
11. Donner, E, **Vasileiadis, S**, Brunetti, G, Bell, J, Wu, X, Aler, S, Short, M, Saint, C, Lombi, E, Drigo, B (2018). Microbiome and mobile antibiotic resistome in wastewater treatment plants and recycled wastewater products. ISME 17, Leipzig, Germany, 12-17 August.

12. Pietta E, Gazzola S, **Vasileiadis S**, Montealgre MC, Roh JH, Murray BE, Cocconcelli PS (2014). Phylogenomic analyses and PBP5 progression of *Enterococcus faecium* strains isolated from food and other sources. ECCO XXXIII - Molecular Taxonomy from biodiversity to biotechnology 33rd Annual Meeting of the European Culture Collections' Organisation, Valencia, Spain, 11-13 June.
13. Gazzola S, **Vasileiadis S**, Cocconcelli PS (2014). Genomic Analysis of the food isolate *Staphylococcus epidermidis* UC 7032. 2nd International Symposium for Fermented Meat, Valencia, Spain, 20-23 October.
14. **Vasileiadis S**, Arena M, Puglisi E, Cappa F, Cocconcelli PS, Trevisan M (2011). Single hypervariable region usage for 16S rDNA diversity screening of complex soil environments. XXIX Convegno SICA, Foggia, Italy, 21-23 September.
15. Puglisi E, **Vasileiadis S** (2011). High-throughput sequencing approaches to elucidate prokaryotic diversity patterns. International Conference on Soil Omics, Nanjing, China, 19-23 November.
16. Puglisi E, Coppolecchia D, **Vasileiadis S**, Hamon RE, Trevisan M (2011). Structural and functional responses of soil microbial communities to zinc stress as revealed by a combined biochemical and biomolecular approach. ICOBTE (International Conference on Biogeochemistry of Trace Elements), Firenze, Italy, 3-7 July.
17. Puglisi E, **Vasileiadis S**, Cappa F, Cocconcelli PS, Trevisan M (2010). Applicazione di tecniche di sequenziamento di nuova generazione per analisi metagenomica della biodiversità del suolo. XXIII Convegno SICA, Piacenza, Italy, 20-21 September.
18. **Vasileiadis S**, Balloi A, Mapelli F, Coppolecchia D, Puglisi E, Daffonchio D, Trevisan M, Hamon RE (2010). Short-term responses of ammonia oxidizers to increasing Zn concentrations: a soil microcosm approach. XXVIII Convegno Nazionale della Società Italiana di Chimica Agraria, Piacenza, Italy, 20-21 September.
19. Puglisi E, **Vasileiadis S**, Demiris C, Karpouzas DG, Capri E, Cocconcelli PS, Trevisan M (2010). Nitrifiers report on vineyard litter responses to fungicides. Med. Group of Pesticides Research (MGPR) 2010 Conference, Pesticides in the Mediterranean Area, Catania, 11-12 November.
20. Puglisi E, **Vasileiadis S**, Cappa F, Trevisan M, Cocconcelli PS (2010). Meta-genomic analysis of soil microbial communities in the "fontanili" (low-land springs) environments. Soil Metagenomics 2010, Branschweig, Germany, 8-10 December.
21. Coppolecchia D, Puglisi E, **Vasileiadis S**, Suciù NA, Hamon RE, Trevisan M (2009). Modelli dose-risposta per valutare l'EC50 di attività biologiche in suolo contaminato con zinco. XXVII Convegno Nazionale della Società Italiana di Chimica Agraria, Matera, Italy, 15-18 September.
22. Puglisi E, Coppolecchia D, Balloi A, Mapelli F, Hamon RE, **Vasileiadis S**, Daffonchio D, Trevisan M (2009). Approfondimenti biochimici e molecolari dei meccanismi d'attacco del suolo ad alte concentrazioni di zinco. XXVII Convegno Nazionale della Società Italiana di Chimica Agraria, Matera, Italy, 15-18 September.
23. Puglisi E, Hamon RE, **Vasileiadis S**, Coppolecchia D, Trevisan M (2009). Adaptation of soil microorganisms to trace element contamination: Mechanisms and consequences for risk assessment. 19th International Symposium in Environmental Biogeochemistry, Hamburg, Germany, 14-19 September.
24. van de Mortel JE, **Vasileiadis S**, Raaijmakers JM (2008). Natural cyclic lipopeptide surfactants: modes of action and effects on plant growth. Xth Meeting of the Working Group: Biological control of fungal and bacterial plant pathogens, Interlaken, Switzerland, 9-12 September.

#### **[CP] Conference posters**

1. Bekris F, Papadopoulou E, Theocharis S, **Vasileiadis S**, Alexandridis T, Koundouras S, Karpouzas D (2023). Identifying the key determinants, cultivar or terroir units, of the carpospheric grapevine microbiome in the viticultural zone of Drama. 10th International Conference of Mikrobiokosmos, Larissa, Greece, 30 Nov - 2 Dec.
2. Rousidou K, **Vasileiadis S**, Perruchon C, Drakou C, Kantsadi A, Stravodimos G, Karpouzas DG (2023). Isolation and characterization of the multi-component carbazole dioxygenase driving the transformation of thiabendazole by a soil bacterial consortium. 10th International Conference of Mikrobiokosmos, Larissa, Greece, 30 Nov - 2 Dec.
3. Swaine M, Bergna A, Oyserman B, **Vasileiadis S**, Karas P, Screpanti C, Karpouzas D (2023). DIMITRA: an upcoming database on effects of pesticides on the soil microbiome and meta-analytic

- analysis. 10th International Conference of Mikrobiokosmos, Larissa, Greece, 30 Nov - 2 Dec.
4. Katsivelou E, Perruchon C, Karas PA, Sarantidou A, Sotiraki S, **Vasileiadis S**, Karpouzas DG (2022). Environmental fate of three antibiotics, sulfamethoxazole, tiamulin and tilmicosin, and their impact on the microbial community composition, resistome and mobilome of two different soils. FEMS Conference on Microbiology 2022, Belgrade, Serbia, 29/6/2022-2/7/2022.
  5. Katsivelou E, Perruchon C, Karas PA, Vassilakis S, Lithourgidis A, Kotsopoulos T, Sotiraki S, **Vasileiadis S**, Karpouzas DG (2022). Following the route of veterinary antibiotics tiamulin and tilmicosin from livestock farms to agricultural soils. FEMS Conference on Microbiology 2022, Belgrade, Serbia, 29/6/2022-2/7/2022.
  6. Opoku S, Drigo B, Wyrsh ER, Cummings ML, Djordjevic SP, **Vasileiadis S**, Awad J, Chow CWK, Saint C, Donner E (2022). Microbial resistome, mobilome and virulome in eutrophic river water. ISME18, 18th International Symposium on Microbial Ecology, Lausanne, Switzerland, 14-19 August 2022.
  7. Karaolia P, **Vasileiadis S**, Michael SG, Karpouzas DG, Fatta-Kassinou D (2021). Shotgun metagenomics assessment of the resistome, mobilome, pathogen dynamics and their ecological control modes in full-scale urban wastewater treatment plants. 9th conference of Mikrobiokosmos, Athens, 16-18 December.
  8. Karas P, Mavriou Z, Alexandropoulou I, Ntougias S, Karpouzas G, Dimitrios, **Vasileiadis S** (2021). Degradation of the highly persistent fungicide thiabendazole by a bacterial consortium in a benchtop bioreactor. 9th conference of Mikrobiokosmos, Athens, 16-18 December.
  9. Katsivelou E, Perruchon C, Karas P, Sarantidou A, Vassilakis S, Lithourgidis A, Kotsopoulos T, Sotiraki S, **Vasileiadis S**, Karpouzas D (2021). Following the route of veterinary antibiotics tiamulin and tilmicosin from livestock farms to agricultural soils 9th conference of Mikrobiokosmos, Athens, 16-18 December.
  10. Perruchon C, Katsivelou E, Vassilakis S, **Vasileiadis S**, Karpouzas D (2021). Enhanced biodegradation in soil of the veterinary antibiotic tiamulin: isolation of tiamulin-degrading bacteria. 9th conference of Mikrobiokosmos, Athens, 16-18 December.
  11. Zafranias A, Myrriotis C, Katsoula A, Campos B, Marco, Karpouzas GD, **Vasileiadis S** (2021). Comparative genomic analysis of iprodione-degrading bacteria reveals genetic elements and interactions involved in the degradation of iprodione 9th conference of Mikrobiokosmos, Athens, 16-18 December.
  12. Tsiknia M, Ariannas D, Skiada V, Kakagianni M, **Vasileiadis S**, Karpouzas DG, Papadopoulou KK, Ehaliotis C (2020). Drivers of the biogeographical patterns of the endophytic fungal community in the roots of the Greek olive tree variety Koroneiki. 15th European Conference on Fungal Genetics, Rome, Italy, 17-20/2/2020.
  13. Katsoula A, **Vasileiadis S**, Sapountzi M, Karpouzas D (2019). The response of the soil and phyllosphere microbial community to repeated application of the fungicide iprodione: Selection for biodegradation or toxicity? Mikrobiokosmos 8th Conference "Microbial Communities as growth engines for Greece", Patras, Greece, 18-20 April.
  14. Mitsagga C, Giavasis I, Katsoula A, **Vasileiadis S**, Karpouzas D, Papadopoulou K (2019). Characterization, identification and physiological studies of a pigment-producing tentative *Pseudomonas* spp. with antifungal properties. Mikrobiokosmos 8th Conference "Microbial Communities as growth engines for Greece", Patras, Greece, 18-20 April.
  15. Papadopoulou E, Lampronikou E, Mpaxtsebani E, Adamou E, Katsaouni A, **Vasileiadis S**, Nicol G, Menkissolgou-Spiroudi U, Karpouzas D (2019). In vitro evaluation of the inhibitory effect of Quinone Imine the main oxidation derivative of Ethoxyquin on nitrification. Mikrobiokosmos 8th Conference "Microbial Communities as growth engines for Greece", Patras, Greece, 18-20 April.
  16. Papazlatani C, Perruchon C, Katsoula A, Lagos S, Papadopoulou E, **Vasileiadis S**, Karas P, Karpouzas D (2019). Isolating bacteria able to rapidly degrade fungicides used in fruit packaging industry: Tailored made inocula for the treatment of relevant agro-industrial effluents. Mikrobiokosmos 8th Conference "Microbial Communities as growth engines for Greece", Patras, Greece, 18-20 April.
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### **Vision, mentors and competences.**

Ever since my master's degree I became very familiar with, and was **fascinated by environmental microorganisms for their central role in ecosystem services**. The immense microbial diversity and its functional redundancy, is housing microbial processes responsible for the mineralization and sequestration of nutrients, the manipulation of plant and animal hormones and hormonal balances, thus contributing to their development, and also the control of microbial plant and animal pathogens. Such processes secure our survival and proliferation through several pathways found in natural and built environments. **Current technologies** (e.g. omics) enable us to **improve our understanding** of these processes and manipulate them to our wellbeing and benefit. In this context, **I seek to study: the dynamic nature of environmental microbial communities** for understanding how interactions have been shaping the presence and activity of these tiny bioreactors throughout the billion years of the planets evolution; **the vastness of the microbial metagenome** for exploring natural novelty related to xenobiotic degradation; **the effects of antibiotic evolutionary/selective pressure** by excessive doses in natural and built environments on the microbial resistance built in response (that may deprive us from recent antibiotic associated advancements like e.g. infection-free operations, which support our long current life-expectancy). All these axes of **my research depended on tools that define the field of molecular microbial ecology and genomics** supporting my vision as outlined here.

Throughout my research career and previous training, I have systematically and progressively been developing my expertise and reputation in the use of molecular biology and omics approaches for microbial ecology. I have gained extensive experience with the use of several laboratory methods, including: standard microbiological culture methods; normal and high throughput enzyme activity analysis approaches; optical and fluorescence microscopy methods; and molecular biology methods from nucleic acids extraction to cloning, PCR-based methods and proteomics. Since the late years of my PhD studies I have been focusing on the culture independent microbial ecology approaches, developing high throughput and cost-effective microbiome analysis methods like the Illumina-based microbiome screening via sequencing of PCR amplified microbial phylogenetic marker fragments. The microbiome analysis has also stimulated my training on necessary for the output analysis bioinformatics and biostatistics tools. In the end and after my PhD studies I was initiated in the world of microbial genomics and transcriptomics, while during my postdoc period I was fascinated and dipped deeper in shotgun meta-genomics/transcriptomics/proteomics/bolomics data analysis in systems biology approaches. Thus far, I have been lucky enough to produce and/or analyze data with representative methodologies of all three sequencing generations (analyzed the 1<sup>st</sup> gen. Sanger data, the 2<sup>nd</sup> gen. Illumina, Pyrosequencing and Ion Torrent sequencing data, and the 3<sup>rd</sup> gen. Nanopore and PacBio sequencing data, I have generated Nanopore sequencing data). All the aforementioned sequence-analysis associated tasks have further expanded and deepened my bioinformatics repertoire, my statistics background, my programming skills (strong knowledge of R and Bash programming and basic knowledge of Perl and Python) and my microbial biochemical and ecological understanding and knowledge.

I had several mentors in different fields of environmental sciences who were and still are considered highly influential global experts in their field. I began my trip in microbial ecology during my MSc thesis carried out in the laboratory of Professor Jos Raaijmakers (current head of the department of the Microbial Ecology at NIOO-KNAW - Netherlands) at the Plant Pathology department of Wageningen UR where I familiarized with culture-based microbiology approaches, enzymatic assays, microscopy and polymerase chain reaction methods. During my MSc internship, I worked as a Research Assistant with Professor Johan Leveau (currently Professor at UC Davis, CA, USA) where I developed skills in single cell genomics with fluorescent in situ hybridization (FISH), fluorescence microscopy and flow cytometry. In my PhD I familiarized with environmental analytical chemistry under the supervision of Professor Marco Trevisan while in my secondment in the Netherlands Institute of Ecology (NIOO-KNAW) under the supervision of Prof. George A. Kowalchuk (currently Professor at the university of Utrecht), I have familiarized with high throughput sequencing approaches in microbial ecology. Since then, I have set-up methods facilitating fast, cost effective and detailed screening of microbial diversity in multiple environments using high throughput sequencing of microbial phylogenetic and functional

marker genes. Since my first PostDoc, Professor Dimitrios G Karpouzas of the Biochemistry and Biotechnology Department of the University of Thessaly (UTh, Larisa, Greece), well reputed in the field of microbial pesticides degradation and environmental enzyme mining, gave me the opportunity to use the skills I developed and carry out bioinformatics analyses on shotgun (meta)genomics/transcriptomics data. This was the beginning of a fruitful collaboration which generated strong ties between me and UTh. During my appointment at FII (formerly CERAR) in Adelaide, UniSA, I collaborated closely with Associate Professor Erica Donner and Professor Enzo Lombi, global experts in state-of-the-art techniques for environmental elemental chemistry (e.g. synchrotron-based X-ray Absorption Spectroscopy). I have incorporated these methods in my own research and was able to gain deeper understanding about selective pressures operating on microbial communities in a range of target environmental matrices (e.g. soil, water, wastewater).

Besides developing my analytical and research skills, I have also devoted a significant amount of time mentoring young researchers via co-supervision and teaching of courses and workshops. I have co-supervised together with the professors in the departments I have performed my post-doctoral research several master and PhD students as my supervisors will happily verify (professor Marco Trevisan – [marco.trevisan@unicatt.it](mailto:marco.trevisan@unicatt.it) -, associate professor Erica Donner – [erica.donner@unisa.edu.au](mailto:erica.donner@unisa.edu.au) -, and professor Dimitrios G Karpouzas – [dkarpouzas@uth.gr](mailto:dkarpouzas@uth.gr)). I have also taught several workshops on microbial genomics and diversity analysis next to complete courses including laboratories – see relevant CV section.

Despite my lab roaming adventures throughout my career, I have always appreciated all the mentoring I received and kept collaborating with past groups as its apparent through my publication track record and contracted consultancies (e.g. recent publications with Professors Trevisan M, Kowalchuk GA, Donner E, Lombi E and collaborative contracts with Advanced Analytical Technologies, and the UniSA FII). Most importantly, the aforementioned ties with the group of Professor Dimitrios G Karpouzas at UTh resulted in great research, as reflected in the numerous project outputs of my publication list. The most inspiring one being that of a systems biology approach (an MSCA IF fellowship) for the characterization of the rapid degradation (3-4 days) of a recalcitrant compound (thiabendazole; half-life in soil 1-2 years) by a microbial consortium (see preprints; submitted in Microbiome). There we had the opportunity to expand our omics toolbox to more high-end methods like non-target proteomics and metabolomics, while I had the opportunity to expand my computational abilities to fields like chemoinformatics (build-up MS databases of putative metabolites) and biophysics (analysis of protein-ligand interactions). The momentum of our research is reflected on our ability to attract prestigious funding (e.g. we have managed to succeed in the national HFRI/ELIDEK funding scheme call and I am currently a group member in several EU funded projects).