

EVANGELIA (EVINA) GONTIKAKI

Assistant Researcher

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Research interests

Marine microbial ecology

Benthic biogeochemistry

Oil spill remediation

Deep-sea ecosystem function

Marine carbon cycle

Marine pollution

Work experience

2021-present

Assistant Researcher

Foundation for Research and Technology – Hellas, Institute of GeoEnergy

2018-2021

Research Fellow (HFRI)

Technical University of Crete, School of Chemical and Environmental Engineering

2010-2017

Research Fellow (MASTS)

University of Aberdeen, School of Biological Sciences

Education

2006-2010 PhD in Biological Sciences

University of Aberdeen & Scottish Association for Marine Science

2002-2003 MSc in Oceanography

University of Southampton, School of Ocean and Earth Science & National Oceanography Centre

1997-2002 BSc (Hons.) in Biology

Aristotle University of Thessaloniki, School of Natural Sciences, Department of Biology

Grants/Awards

NERC Oil & Gas catalyst fund (NE/L00819X/1; 2014-2015; £98,871) “The natural capacity for oil degradation in marine environments: towards developing DNA-based biosensors for monitoring low-level oil pollution” (Co-I), University of Aberdeen.

NERC UK Oil & Gas CDT studentship (2014-2018; estimated value £80,000) “Using the intrinsic recovery capabilities of deep-sea and polar ecosystems to reduce the impact of accidental oil release” (Co-supervisor, Amy Bode PhD candidate), University of Aberdeen.

NERC CASE studentship (2014-2018; £82,680) “Site-specific DNA- and RNA- based biomarkers to monitor low-level oil pollution and test the effectiveness of bioremediation approaches” (Co-supervisor, Lloyd Potts PhD candidate), University of Aberdeen.

MASTS MBF grant (2016-2017; £2000) “Photochemical and microbial degradation of particulate terrigenous organic matter in intertidal sediments” (Personal grant), University of Aberdeen.

Hellenic Foundation for Research and Innovation (ΕΛΙΔΕΚ), 1st call to support Postdoctoral Researchers (2018-2021; €155,000) “HEALMED - Determination of the self-healing capabilities of the Eastern Mediterranean Sea to accidental deep-sea oil releases” (PI), School of Environmental Engineering, Technical University of Crete.

Hellenic Foundation for Research and Innovation (ΕΛΙΔΕΚ), 2nd call to support Faculty Members and Researchers (2022 – 2025; €175,000) “X-PRESS - EXtreme environments: High PRESSure Sampling and experimentation system for deep sea hydrocarbon releases” (Co-I), FORTH-IPR

Awards & Distinctions

European Commission Seal of Excellence for the project proposal 744158 “MARZYMES-Marine enzymes in support of a sustainable cellulosic biofuels industry”, call H2020-MSCA-IF-2016 by Evangelia Gontikai and the University of Aberdeen, U.K (score 86.4%).

European Commission Seal of Excellence for the project proposal 798548 “HEALMED – Determination of the self-healing capabilities of the Eastern Mediterranean Sea from accidental deep-sea oil releases”, call H2020-MSCA-IF-2017 by Evangelia Gontikai and the Technical University of Crete, Greece (score: 90.4%).

Peer-reviewed publications

Antoniou E, Fragkou E, Charalampous G, Marinakis D, Kalogerakis N, **Gontikaki E**. Emulating deep-sea bioremediation: Oil plume degradation by undisturbed deep-sea microbial communities using a high-pressure sampling and experimentation system. Submitted to *Energies* (Special Issue: Frontiers in Marine Carbon Cycle).

Charalampous G, Fragkou E, Kormas KA, De Menezes AB, Polymenakou PN, Pasadakis N, Kalogerakis N, Antoniou E, **Gontikaki E** (2021) Comparison of Hydrocarbon-Degrading Consortia from Surface and Deep Waters of the Eastern Mediterranean Sea: Characterization and degradation potential. *Energies* 14(8), 2246 (Special Issue: Marine Biotechnology: Applications and Challenges)

Gontikaki E & Witte U (2019) No strong evidence of priming effects on the degradation of terrestrial plant detritus in estuarine sediments. *Frontiers in Marine Science* 6: article 327.

Perez-Calderon LJ*, **Gontikaki E***, Potts LD, Shaw S, Gallego A, Anderson JA, Witte U (2018) Pressure and temperature effects on deep-sea hydrocarbon-degrading microbial communities in subarctic sediments. *MicrobiologyOpen* 2018;e768 (*equal contribution authors)

Perez-Calderon LJ, Potts LD, **Gontikaki E**, Gubry-Rangin C, Cornulier T, Gallego A, Anderson JA, Witte U. Bacterial community response in deep Faroe-Shetland Channel sediments following hydrocarbon entrainment with and without dispersant application. *Frontiers in Marine Science* 5: article 159.

Gontikaki E, Anderson JA, Witte U. Hydrocarbon-degrading bacteria in deep-water subarctic sediments (Faroe-Shetland Channel). *Journal of Applied Microbiology* 125, 1040–1053

Potts LD, Perez Calderon LJ, **Gontikaki E**, Keith L, Gubry-Rangin C, Anderson JA, Witte U (2018). Effect of spatial origin and hydrocarbon composition on bacterial consortia community structure and hydrocarbon biodegradation rates. *FEMS Microbiology Ecology* 94: fiy127.

Ferguson R, **Gontikaki E**, Anderson JA, Witte U (2017). The variable influence of dispersant on degradation of oil hydrocarbons in subarctic deep-sea sediments at low temperatures (0-5°C). *Scientific Reports* 7:2253; doi:10.1038/s41598-017-02475-9

Gontikaki E, Thornton B, Cornulier T, Witte U (2015). Occurrence of priming in the degradation of lignocellulose in marine sediments, *PLoS ONE* 10(12): e0143917.

Gontikaki E, Thornton B, Huvenne VIA, Witte U (2013). Negative Priming Effect on Organic Matter Mineralisation in NE Atlantic Slope Sediments. *PLoS ONE* 8(6): e67722.

Serpetti N, **Gontikaki E**, Narayanaswamy BE, Witte U (2013). Macrofaunal community inside and outside of the Darwin Mounds Special Area of Conservation, NE Atlantic. *Biogeosciences*, 10, 3705–3714.

Gontikaki E, Polymenakou PN, Thornton B, Narayanaswamy BE, Black K, Tselepidis A, Witte U (2012). Microbial response to organic matter enrichment in the oligotrophic Levantine Basin (Eastern Mediterranean). *Geomicrobiology Journal* 29: 648-655.

Gontikaki E, van Oevelen D, Soetaert K, Witte U (2011). Food web flows through a sub-arctic deep-sea benthic community: modelling an isotope tracer experiment. *Progress in Oceanography* 91: 245-259.

Gontikaki E, Mayor DJ, Thornton B, Black K, Witte U (2011). Processing of ¹³C-labelled algae by a bathyal community at sub-zero temperatures. *Marine Ecology Progress Series* 421: 39-50.

Gontikaki E, DJ Mayor, BE Narayanaswamy, U Witte (2011). Feeding strategies of deep-sea sub-Arctic macrofauna of the Faroe-Shetland Channel: combining natural stable isotopes and labeling techniques. *Deep-Sea Research I* 58:160-172

Gontikaki E, Antoniadou C & Chintiroglou CC (2003). "Population Structure of *Cerastoderma glaucum* and *Abra ovata* in Vouliagmeni Lagoon (Attiki). *Journal of the Marine Biological Association of the U.K.*, 83: 1095-1097.

Teaching/Supervisory responsibilities

Undergraduate and postgraduate courses/lectures

Demonstrator in BI25Z4 Ocean Biology course (1st year), School of Biological Sciences, University of Aberdeen (2007).

Teaching assistant in Benthic Ecology (3rd year) and BUGS Biology for undergraduates course (1st year), School of Biological Sciences, University of Aberdeen (2012).

Teaching assistant in BI39Z5 Mediterranean Marine Biology Field course, School of Biological Sciences, University of Aberdeen (2018).

Lecture in the “Research Lectures” MSc course, School of Environmental Engineering, Technical University of Crete (2019).

PhD Student supervision

2014-2018 Amy Bode (co-supervisor)
2014-2018 Lloyd Potts (co-supervisor)
2019- Georgia Charalambous

MSc, Honours and visiting students

2021 Sotiria Frygana (BSc thesis)
2020 Marianna Palatsidou (BSc thesis), Monica Ventura (Internship)
2019 Katerina Tzifa (BSc thesis), Evangelia Kanaki (BSc thesis), Gabriele Marcandalli (ERASMUS)
2016 Kathrin Vossen, Internship
2014 Raymont Awortu, MSc thesis
2014 Christina Nicolova, MSc Thesis
2013 Pablo Rodriguez Ros, ERASMUS Placement
2013 Isabel Seguro, volunteer
2011 Melanie Brandt, LEONARDO DA VINCI Programm

Training

- Bioinformatics: “Environmental Metagenomics” workshop by Physalia Courses (5 days), March 2022.
- Bioinformatics: “Analysis of microbial NGS data”, workshop during the 8th MikroBioKosmos Symposium - April 2019
- Summer school: Daniel Jouvance-UPMC-UCY International School in Marine Biology, Cyprus (6 days) – October 2017
- Bioinformatics: “RNA Sequencing”, Centre for Genome Enabled Biology and Medicine workshop, University of Aberdeen – January 2017
- Bioinformatics: “Quality control of next generation sequencing reads”, Centre for Genome Enabled Biology and Medicine workshop, University of Aberdeen – November 2016
- Bioinformatics: “Maxwell Compute Cluster and Unix: basic and advanced workshops”, Centre for Genome Enabled Biology and Medicine workshop, University of Aberdeen – October 2016
- Bioinformatics: “Analysing next generation 16S rRNA gene sequencing data (Illumina) using Mothur”, Centre for Genome Enabled Biology and Medicine workshop, University of Aberdeen (2 days) – January 2015
- Statistics: “Mixed effects Modelling techniques”, Highland Statistics Ltd. (3 days) - February 2010
- Statistics: “Multivariate statistics”, Highland Statistics Ltd. (4 days) – June 2008
- Statistics: “Univariate statistics”, Highland Statistics Ltd. (4 days) - June 2006
- Statistics: “Introduction to More Advanced Statistical Methods”, College of Life Sciences and Medicine, University of Aberdeen (5 days) – January 2008
- Statistics: “Introduction to R”, College of Life Sciences and Medicine, University of Aberdeen (3 days) – January 2008
- Statistics: “Beginners statistics”, College of Life Sciences and Medicine, University of Aberdeen (3 days) – January 2007
- Summer school: “Aquatic Microbial and Molecular Ecology”, SOAS -International School for Aquatic sciences, University of Southern Denmark, Denmark (3 weeks) - August 2007

Conference contributions

- European Bioremediation Conference, Chania, 12-17 June 2022
- EGU General Assembly, Vienna, 2022, <https://doi.org/10.5194/egusphere-egu22-10236>

- 9th MikroBiokosmos Symposium, December 2021, Athens, Greece
- ISMOS⁸ – 8th International Symposium on Applied Microbiology and Molecular Biology in Oil Systems, June 2021, virtual conference
- 12th European Conference of Chemical Engineering and the 5th European Congress of Applied Biotechnology, September 2019, Florence, Italy
- 12^o Hellenic Scientific Conference of Chemical Engineering, May 2019, Athens, Greece
- 8th MikroBiokosmos Symposium, April 2019, Patras, Greece
- 6th International Symposium on Applied Microbiology and Molecular Biology in Oil Systems, 2017, San Diego, California, Oral and Poster presentation.
- 14th Deep Sea Biology Symposium, September 2015, Aveiro, Portugal, Poster presentation
- 6th National Conference of “Microbiokosmos”, May 2015, Athens, Greece, Poster presentation
- MASTS Annual Science meeting, September 2014, Oral presentation
- Gulf of Mexico Oil Spill & Ecosystem Science Conference 2014, Mobile, AL, USA
- EGU, Vienna, April 2013, Oral presentation
- 2nd World Conference on Marine Biodiversity, Aberdeen, September 2011, Poster presentation
- Deep-Sea Research Symposium, Reykjavik, June 2010, Oral presentation
- HERMIONE meeting, Malta, April 2010, Poster presentation
- HERMES meeting, Faro, March 2009. Oral presentation.
- ASLO conference, Nice, January 2009. Oral presentation.
- 1st National Conference of “Microbiokosmos”, Athens, Greece, December 2008. Poster presentation.
- Challenger Society conference, Bangor, September 2008. Poster presentation.
- 9th ICZEGAR, Thessaloniki, Greece, 2002. Oral presentation.

Professional activities

• **Conference organisation**

Co-convenor of session “Biogeochemistry of coastal seas and continental shelves, with a special focus on Sedimentary Carbon in the Coastal Ocean (including Vladimir Ivanovich Vernadsky Medal Lecture)” at the EGU General Assembly (Vienna, 2016 and 2017).

Co-convenor and chair of the session “Diversity and Function of Deep-Sea Ecosystems” at the 2nd World Conference on Marine Biodiversity (Aberdeen, 2011)

• **Reviewing activities**

Reviewer for the following peer-reviewed journals: Deep-Sea Research I, Science of the Total Environment, Polar Biology, Biogeosciences, Scientific Reports, Limnology and Oceanography, Applied Sciences, FEMS Microbiology Ecology, Journal of Applied Microbiology, Journal of Environmental Management, Journal of Fungi, Biomolecules, PeerJ, MDPI Microorganisms, Toxicological and Environmental Chemistry

Guest Editor at MDPI Special Issue “Frontiers in Marine Carbon Cycle”

• **Professional committees/memberships**

Member of the steering group of the MASTS Marine Biogeochemistry Forum (2014-2016).

Member of the International Society for Microbial Ecology (ISME).

Member of the Hellenic Initiative “MikroBioKosmos”

• **Outreach activities:**

Organisation of primary school students one-day visits to Oceanlab with theoretical and practical sessions. Volunteer for guided tours of Oceanlab for interested public. Communication of research outcomes to mass media (e.g. <http://www.bbc.com/news/uk-scotland-north-east-orkney-shetland-40027207>).

Administrator of the blog (<https://deepseaoilspill.wordpress.com/>) and facebook page (https://www.facebook.com/deepseaoilspill/?modal=admin_todo_tour) of the HFRI project HEALMED.