ELENI DERMITZAKI

PhD Student | Biomanufacturing, Synthetic Biology & Genome Engineering

Engineering Sustainable Biotherapeutics Through Genome Engineering and Synthetic Biology

Texas A&M University
College Station, TX, USA

ABOUT ME

I am a passionate biotechnologist with expertise in molecular biology and genetics. My interests include Sustainability and Circular Economy, Genome Editing and Engineering, CRISPR-Cas Technologies, Metabolic Engineering and Synthetic Biology, and Large-Scale Bioprocess Optimization. My goal is to develop innovative and cost-effective biotherapeutics with improved yield and quality, making advanced therapies more accessible to patients worldwide.

Greece | Based in USA

RESEARCH INTERESTS

- Genome Editing & Engineering
- CRISPR-Cas Technologies
- Synthetic Biology
- Metabolic Engineering
- Large-Scale Bioprocess Optimization
- Systems Biology & Omics
- Sustainability & Circular Bioeconomy
- Biotherapeutic Development

CERTIFICATIONS

- Introduction to Bioconductor, Harvard
- Bioinformatic analysis of NGS, NKUA
- Introduction to SPSS, Hellenic Open University
- Medicine through the microscope, NKUA
- Basics of CRISPR CAS9, Jackson Laboratory

TEXAS A&M UNIVERSITY

EDUCATION

08/2025 – Ongoing
PhD Student in Interdisciplinary Engineering
Texas A&M University, College Station, TX, USA

10/2023 – 10/2024
M.Sc. in Human Genetics & Genetic Counseling
Department of Medicine, University of Thessaly, Greece
(First Ranked Graduate | GPA: 9.48/10)

11/2020 – 10/2023
M.Sc. in Bioinformatics & Computational Biology
Department of Biology, National & Kapodistrian University of Athens, Greece

09/2014 – 11/2020
M.Sc. in Biotechnology
Agricultural University of Athens, Greece

RESEARCH EXPERIENCE

05/2024 – 10/2025
Research Intern – Molecular Cytogenetics Lab, GR

08/2021 – 09/2023
Research Intern – Biomedical Research Foundation of the Academy of Athens, GR

06/2022 – 08/2022
Research Intern – Bioiatriki, GR

07/2018 – 08/2018 & 03/2019 – 06/2019
Research Intern – Biomedical Sciences Research Center "Alexander Fleming", GR

TECHNICAL SKILLS

Laboratory Techniques *(in vivo, in vitro)*:
PCR, qPCR, µCT, H&E, Carmino staining, DNA/RNA isolation, cell culture, microscopy (fluorescence, TEM), Western blotting, immunostaining, exosome isolation, treatment cells, mice operation.

Data Analysis & Bioinformatics *(in silico)*:
R, Bioconductor, RStudio, BLAST, SPSS, microarrays analysis, FDR correction, Limma, Meta-analysis, enrichment analysis, NGS data analysis.

Experimental Design:
From hypothesis development to experimental planning, method optimization and data interpretation.

PUBLICATIONS

- Dermitzaki, E., et al. (2026). Exploring Gene Expression Patterns in Alzheimer's Disease Using a Human Microarray Data Meta-Analysis. Biology 15 (4), 345
- Synovial Fibroblast Extracellular Vesicles Induce Inflammation via Delivering miR-21-5p in Osteoarthritis. Cells 2025, 14(7), 519. (Acknowledged contributor).

PRESENTATIONS

06/2023 (Selection)	BIOMED-AI Summer School: Biomedicine and Bioethics Supporting Responsible Innovation: in the era of Big Data and AI
09/2023 (Presentation)	Conference of the Hellenic Society for Computational Biology and Bioinformatics (HSCBB), Holiday Innote. (Thessaloniki). Meta-analysis of Human Brain Microarray Datasets for Alzheimer's and Parkinson's Diseases
12/2023 (Presentation)	73rd Conference of the Hellenic Society for Biochemistry and Molecular Biology (HSBMB), Eugenides Foundation (Athens): "Meta-analysis of Brain Microarray Data for Alzheimer's and Parkinson's Neurodegenerative Diseases"
04/2024 (Poster)	Conference of the Hellenic Society for Computational Biology and Bioinformatics (HSCBB), Hellenic Pasteur Institute (Athens). Meta-analysis of Human Brain Microarray Datasets for Parkinson's Disease Languages (poster)
12/2021 (Short Talk)	50th annual Panhellenic Medical Conference (Athens): "Bacteria of the Genus Streptomyces with Antimicrobial Activity"

AWARDS & ACHIEVEMENTS

Excellence in Academic Performance – MSc (First Ranked Graduate)
Active member in scientific communities and workshops