



Nawal Maria Boukli

Affiliate, Neurosurgery

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Dr. Nawal Boukli is a Full Professor in the Department of Microbiology and Immunology at the Universidad Central del Caribe. Her research focuses on how cells transition from adaptive to maladaptive stress, with a central emphasis on endoplasmic reticulum (ER) stress, unfolded protein response signaling, and GRP78 as a master regulator of cell fate. She has defined key mechanistic links between GRP78-driven stress adaptation, metabolic reprogramming, and resistance to therapy in glioblastoma, while advancing GRP78 as a therapeutic target through anti-GRP78 antibody-based strategies aimed at disrupting tumor survival pathways.

Her broader research program integrates molecular biology, proteomics, cancer biology, and NeuroHIV to identify stress-driven mechanisms of disease progression. In parallel, her NeuroHIV research examines how HIV-1 gp120 induces maladaptive ER stress responses that disrupt astrocyte–neuron interactions and drive synaptic vulnerability. Her work unifies cancer and neurodegeneration through a shared framework of proteostasis failure and stress-driven disease progression.

In her project with Stanford University, Dr. Boukli is extending this program into spatial neurobiology to define astrocyte-specific ER stress domains and map how gp120-driven stress signaling becomes spatially organized within intact neural systems. This work defines spatially resolved therapeutic targets and drives high-impact translational studies.

Dr. Boukli is also recognized for her innovative teaching, leadership, and mentorship. She has mentored over 17 master's and 6 Ph.D. students, developed student-centered mentoring and scientific training activities, and launched the first annual ABRF speed mentoring initiative in 2020 after being elected to the ABRF Executive Board in 2019. She also serves as a reviewer for the NIH Center for Scientific Review, including cancer therapeutics study sections.