



BIOCHEMISTRY CHEMISTRY COLLOQUIUM

“Beyond Termination: The Expanding Roles of MTERF Proteins in Mitochondrial Biology”



Mitochondria are responsible for many essential cellular processes, including respiration, and mitochondrial dysfunction is linked to multiple human diseases including myopathies, cancer, Alzheimer’s and Parkinson’s diseases. Proper regulation of mitochondrial biogenesis is critical to preserve mitochondrial function. The MTERF protein family plays a crucial role in this process. Initially thought to solely regulate mitochondrial gene transcription, these proteins are now understood to be versatile nucleic acid binders that influence multiple key steps in biogenesis. MTERF1, the founding member, controls transcription termination. MTERF3 and MTERF4, structurally similar, play distinct but vital roles in assembling mitochondrial ribosomes, essential for protein synthesis within the organelle. Our research sheds light on the mechanisms by which MTERFs operate within mitochondria, particularly the intricate details of mitochondrial ribosome assembly, a process that remains under active investigation.

Miguel Garcia-Diaz, PhD is the Interim Vice President for Research at Stony Brook University and the Operations Manager for the SUNY Research Foundation. He received a BS in Biochemistry and a PhD in Biochemistry and Molecular Biology from the Universidad Autonoma in Madrid, Spain. Following completion of a post-doctoral fellowship at the National Institute of Environmental Health Sciences, in 2007, he was appointed as Assistant Professor in the Renaissance School of Medicine’s Department of Pharmacological Sciences where he is currently a Professor. Miguel is a Structural Biologist who has focused his research on understanding how mitochondria use their genome to build the different structures necessary for mammalian respiration. He is firmly committed to diversity and access, and has been dedicated to developing the next generation of biomedical researchers, directing the T32-funded Training Program in Pharmacological Sciences and co-directing Stony Brook’s NIH-funded IRACDA Training Program.

MIGUEL GARCIA-DIAZ, Ph.D.

UNIVERSITY OF DELAWARE

MONDAY

APRIL 22, 2024 @4:00 PM

101 BRL

ZOOM

<https://udel.zoom.us/j/92916115352>

Password: MTERF



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