



CENTER FOR THE
ADVANCEMENT OF
WEARABLE
TECHNOLOGIES

Congratulations!

Dr. Juan F. Patarroyo Montenegro



Please join me in congratulating **Dr. Juan F. Patarroyo Montenegro**, a faculty member of the Department of Computer Science and Engineering at the University of Puerto Rico, Mayagüez (UPR-M), a researcher/collaborator at the Center for the Advancement of Wearable Technologies (CAWT), and a CAWT Startup Funding for New Faculty Hires awardee. His proposal, titled "CAREER: Intelligent Biomarker Analysis Based on Wearable Distributed Computing," has been awarded by the **Faculty Early Career Development (CAREER) Program**.

CAREER is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education, and to lead advances in the mission of their department or organization. Dr. Patarroyo is the 19th UPRM faculty member to receive the CAREER award since 1997, the 10th currently serving as a UPRM faculty member, and the 2nd CAWT faculty member to earn this distinction.

Dr. Patarroyo's CAREER project aims to develop **WearNet**, a wearable sensor network with distributed AI-based computing capabilities, primarily for biomechanics analysis. WearNet will address limitations of wearable inertial sensors by using machine learning (ML) to estimate missing data, reducing sensor quantity while maintaining accuracy. To meet strict requirements for size, energy efficiency, and computational performance, novel distributed ML models will be implemented on wearable sensors using custom-designed FPGA architectures inspired by GPUs. This 5-year project will establish a foundation for future cyberinfrastructure aimed at diagnosing and monitoring conditions in elderly patients and athletes using wearable computing.

We eagerly anticipate Patarroyo's leadership and contributions to advancing competitive WT research within our jurisdiction. Once again, we extend our congratulations to him on this outstanding accomplishment!

¡Enhorabuena!

Dr. Arturo J. Hernandez-Maldonado
Director of the Center for the Advancement of Wearable Technologies