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UNIVERSITY

PROFESSOR ANURAG AGRAWAL MBBS, Dipl Am Board, PhD, FAMS, FASc, FNA, FNASc

Dean Biosciences & Health Research

Trivedi School of Biosciences

Dated: August 28, 2024

Subject: Nomination for Sun Pharma Science Foundation Research Award - Medical Sciences-Basic Research

Citation (summary) on the outstanding research work on which the award is claimed

Dr. Debarka Sengupta has made pioneering contributions to the field of cancer detection and personalized therapeutics by harnessing the power of artificial intelligence (AI). His work focuses on overcoming the challenges posed by cancer cell heterogeneity and plasticity, key obstacles in effective cancer management. Sengupta's research has led to the development of innovative blood-based cancer detection methods using single-cell and bulk transcriptomics, coupled with robust AI techniques, making early diagnosis more affordable and accessible.

Additionally, his work on genome-informed personalized therapeutics employs AI-driven models to predict patient-specific drug responses, improving treatment precision. By leveraging publicly available data and experimentally validating key findings, Sengupta has demonstrated the potential of AI in navigating the vast search space of transcriptomic configurations and chemical compounds to identify reproducible molecular patterns for clinical use.

One of his notable achievements includes recognizing circulating Triple Negative Breast Cancer cells using AI-identified molecular patterns, overcoming the limitations of traditional biomarkers. His work has garnered international collaborations, led to technology transfers, and formation of a multinational company, in the space of genome-informed cancer care, exemplifying the global impact and future potential of his research in improving cancer diagnostics and treatment outcomes.

Sincerely

Anurag Agrawal

