Citation (summary) on the outstanding research work on which award is claimed (250 words) signed by the nominator

Dr. Sharmila Bapat's research contributions in **Epithelial to Mesenchymal Transitions (EMT)** have generated seminal knowledge and opportunities through dissecting out of the mechanistic and regulatory implications of tumor cell behavior in varying cellular contexts. Her research focuses on high-grade serous ovarian cancer (HGSC), which is recognized to be a challenging disease for basic and clinical studies. Her achievements over the last 2 decades reflect on novel observations and hypotheses that were developed further through rigorous assessment and substantiated by experimental detailing of the various components. Dr. Bapat was the first to identify the association of EMT transcriptional factors Snail and Slug with aggressiveness of HGSC metastases and mechanistic elucidation of their non-canonical roles in enrichment of cancer stem cells after chemotherapy; this report is considered a landmark in the field. She further resolved an EMT-driven molecular subclass in HGSC and other cancers, of which the former was validated in human clinical cases. A deeper molecular understanding of the regulation of this subclass involved auto- *vs.* TCF21-mediated regulation of *SNAI2* expression. The molecular mapping further led to resolution of a gradient of cellular phenotypes (epithelial to mesenchymal with intermediates), regulated by the two transcription factors, which posits phenotypic plasticity in correlation with different modes of cell migration as revealed through live cell imaging. A final feather in her cap is the development of a cytotoxic monoclonal antibody indicated for the EMT tumor subtype of HGSC. These studies outline a paradigm shift towards personalized cancer therapy.

Dr. Mohan R. Wani

Director, NCCS, Pune