Prof Paturu Kondaiah, Ph.D (Genetics), is the Professor & Chairperson, Department of Molecular Reproduction, Development and Genetics**,** Indian Institute of Science, Bangalore. He was the Research Fellow, Institute of Genetics, Osmania University, Hyderabad, India Visiting Fellow/Visiting Associate, Laboratory of Chemoprevention, National Cancer Institute, NIH, Bethesda MD, USA. Is the Faculty (currently Professor), Department of Molecular Reproduction, Development and Genetics, Indian Institute of Science, Bangalore, India. He is the Chairperson, Dept. of MRDG, IISc, Bangalore. Member, Review Committee on Genetic Manipulation, Department of Biotechnology, (GOI) India. Member, Committee to evaluate COE proposals in cancer biology, DST. he was the Member, Board of Studies in life sciences, University of Hyderabad. Is the Member, DST-PAC for Fast track Young Scientist's proposals. He is the Chairman, Review Committee on Genetic Manipulation, Department of Biotechnology, (GOI) India. He is immensely interested in cancer biology and Molecular principles of Dosha prakriti. He has over 100 peer reviewed research publications. Currently, his laboratory is focused on the regulation of gene expression particularly by growth factors and hormones in disease processes. Using micro arrays, the differential regulation of genes by TGF-beta in normal and tumor cells has been demonstrated and mechanism of regulation of some of the TGF-beta targets such as S100A2 has been deduced. S100A2 gene is involved in tumorigenesis and experiments conducted in his laboratory revealed its pro tumorigenic role especially for invasion and growth of the tumors. TGF-beta regulates several pro tumorigenic genes in transformed cells and not in normal cells. This differential expression of genes may require oncogenic transformation and MAPK pathway activation. It is not clear as to which pathway triggered by oncogenic transformation is responsible for pro tumorigenic actions of TGF-beta. TGF-beta and its family members

Activins are involved in the tumor invasion/metastasis. The precise mechanisms are being studied in his laboratory.

In the cancer biomarker identification, significant contributions have been made in the area of novel biomarkers for prognostic and therapeutic use in gliomas and breast cancers. The expression and role of IGFBP isoforms 2, 3 and 4 in glioma progression/prognosis has been studied. Expression of IGFBP2, 3 and 4 were found to correlate with poor prognosis in GBM patients and promote the invasiveness of tumor cells. IGFBP2 is also associated with high grade breast cancers and functional studies suggested its role in invasion and EMT. Finally, as a part of efforts to study cancer initiation, work on molecular characterization of a pre-cancerous lesion called submucous fibrosis is carried out. A molecular connection between the arecoline actions on epithelial cells, fibroblasts activation has been deduced. This together is instrumental in the initiation and progression of submucous fibrosis. TGF-beta and BMP7 pathways were found to play important but opposing roles in the progression of OSF.

His laboratory also contributed significantly to the area of chemical biology especially the search for anti-cancer molecules. Recent discoveries include, identification of a small molecule that activates mutant p53.

In the future, the emphasis his laboratory would be on the functional characterization and study the role of genes that are identified as differentially expressed in OSMF, novel differentially expressed genes in glioma and breast cancer tissues, biology of tumor metastatasis, characterization of anti-cancer activities of small synthetic molecules.