

RISE Talks Series

Who? Bimal DasMahapatra, RISE Fellow

What? **Environment, p53 Mutation and Cancer:**
Challenges and opportunities in targeting mutant p53 for therapy

Where? Hall of Sciences, Room 326

When? 12:00-1:00 on Friday, April 4

The tumor suppressor protein p53, also known as the “Guardian of Genome”, is the most frequent target for abnormalities in every type of cancer. The p53 mutational spectrum reveals a direct causal effect of ultraviolet radiation in skin cancer, of aflatoxin B1 in liver cancer and of smoking in lung cancer. The protein is mutated in 50% of cancers. Cancers with mutant p53 are aggressive and often resistant to therapy, making the mutant p53 a much-aspired target for drug discovery research. Most of these oncogenic mutations are point mutations in the DNA binding domain of p53 protein, and they reduce thermodynamic stability of the protein in physiological temperature. Although it has been challenging to reactivate mutant p53, recent breakthroughs in research have led to the discovery of small molecules that restore wild-type activity in mutant p53 and raise the potential for therapy development. These along with the current efforts by RISE students will be presented.