

SUMMER 2024 – SC INBRE RET PROJECT DESCRIPTION FORM

Mentor's Name	Dr. Samir Raychoudhury
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Research Subject Area	Toxicology/Cell biology

- A. Briefly describe overall research program at your laboratory.** The overall research program in my laboratory is based on biomedical research to study reproductive biology and toxicology, protein functions in cancer biology, cell-cell and cell-matrix interactions. Currently we are involved in studying molecular mechanism of environmental pollutants.
- B. Briefly describe specific project(s) for your teacher:** The major focus will be to test if exposure of breast cancer cells (both MCF-7 and MDA MB 231 cells) to polycyclic aromatic hydrocarbons (PAHs) will alter cell structure and functions. The purpose of this research is to study the expression of proteins of our interest in human breast cancer cells. We will perform western blot, ELISA and indirect immunofluorescent microscopy. We will examine the role of NOX proteins in the maintenance of the transformed and tumorigenic phenotype of MCF-7/MDA-231 cells.
- C. Will any other people (post docs, grad students, undergraduate students, colleagues, etc.) be involved directly with your teacher?** The teacher would work with me, one undergraduate research student and one research associate.
- D. Will you require any advanced reading/preparation for the teacher? If yes, please briefly describe.** In advance, the teacher can study books or paper on cell culture techniques. I will be able direct the teacher on reading materials via email contact or web links.

Publication from our lab:

Smith J, Neupane R, McAmis W, Singh U, Chatterjee S, **Raychoudhury S**. Toxicity of polycyclic aromatic hydrocarbons involves NOX2 activation. Toxicology Reports 6:1176-1181 (2019).

